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A COLLECTION OF MEDITERRANEAN DEMOSPONGIAE (PORIFERA) WITH, IN APPENDIX, A LIST OF THE DEMOSPONGIAE HITHERTO RECORDED FROM THE MEDITERRANEAN SEA

A collection of Mediterranean Demospongiae has been gathered in the course of many years on various occasions and not methodically. Most specimens were collected by this writer, by diving and dredging; some were made available by colleagues and institutions; a very valuable contribution is represented by material dredged and sorted by the University of Nice (all the specimens marked NIS). The collection comprises 285 species, amounting to about 50% of the Demospongiae so far recorded from the Mediterranean Sea.

A part of this collection has been already published (Pulitzer-Finali, 1972 and 1978; Pulitzer-Finali & Pronzato, 1977 and 1980). The present paper deals with the remaining material, comprising 197 species.

Each specimen has received a register number (R.N.) which refers to my files and preparations. Colours indicated as C.C. refer to the plates of Séguy's « Code Universel des Couleurs ». The specimens are being deposited at the Museum of Natural History of Genoa (MSNG).

GEOGRAPHIC COORDINATES OF THE LOCALITIES MENTIONED

Argentario, Porto Ercole: 42°23’ N, 11°13’ E.
Bari: 41°10’ N, 16°46’ E.
Barletta: 41°19’ N, 16°17’ E.
Bogliasco: 44°23’ N, 9°4’ E.
Calvi (off —): 42°32’-42°41’ N, 8°36’-8°53’ E.
Camogli (off —): 44°10’ N, 9°5’ E.
Cap Ferrat (south of —): 43°40’ N, 7°19’ E.
Cap Ferrat and Cap d’Ail (between —): 43°42’-43°43’ N, 7°22’-7°23’ E.
Capo Vaticano: 38°38’ N, 15°49’ E.
Capraia: 43°2’ N, 9°51’ E.

Castellabate: 40°18' N, 14°56' E.
Castro Marina: 40° N, 18°25' E.
Crete, Agio Nicolaos: 35°11' N, 25°43' E.
—, Gournia: 35°7' N, 25°46' E.
Dubrovnik: 42°38' N, 18°6' E.
Gallipoli: 40°15' N, 18°1' E.
Gargano, Baia di Campi: 41°49' N, 16°12' E.
Genoa (Gulf of —): 44°5' N, 9°10' E.
Ilovik Island: 45°27' N, 14°32' E.
La Spezia: 44°3' N, 9°52' E.
Leuca E.: 39°48' N, 18°23' E.
Leuca W.: 39°47' N, 18°21' E.
Limski Kanal: 45°8' N, 13°40' E.
Magaud (Banc du —): 43°-43°3' N, 6°33'-6°41' E.
Massa Lubrense: 40°37' N, 14°21' E.
Mola: 41°4' N, 17°5' E.
Naples (Bay of —): 40°45' N, 14°10' E.
Palese (Bari): 41°10' N, 16°46' E.
Panarea: 38°38' N, 15°4' E.
Pomer Bay (Pula): 44°53' N, 13°49' E.
Ponza: 40°53' N, 12°57' E.
Porto Badisco: 40°5' N, 18°29' E.
Porto Cesareo: 40°15' N, 17°54' E.
Porto Ercole: 42°23' N, 11°13' E.
—, Grotta Azzurra: 42°22' N, 11°12' E.
—, Isolotto: 42°23' N, 11°13' E.
Porto Tricase: 39°56' N, 18°24' E.
Portofino (south of —): 44°13' N, 9°12' E.
—, Altare: 44°18' N, 9°12' E.
—, Aurora: 44°19' N, 9°13' E.
—, Lighthouse: 44°18' N, 9°13' E.
—, Olivetta: 44°19' N, 9°13' E.
—, Punta Chiappa: 44°18' N, 9°9' E.
—, S. Fruttuoso: 44°19' N, 9°10' E.
—, Vessinaro: 44°18' N, 9°11' E.
Recco: 44°21' N, 9°9' E.
Riva Trigoso: 44°15' N, 9°24' E.
Rovinij: 45°5' N, 13°38' E.
S. Caterina: 40°8' N, 17°59' E.
Taranto (Gulf of —): 40° N, 17° E. ca.
—, Mar Piccolo: 40°29' N, 17°15' E.
Torre a Mare: 41°5' N, 17° E.
Torre Incine: 40°59' N, 17°16' E.
Tremiti Islands, Cala dello Spido: 42°7' N, 15°30' E.
—, Cala Tonda: 42°7' N, 15°29' E.
—, Cala Sorrentino: 42°8' N, 15°30' E.
—, Grotta delle Viole: 42°6' N, 15°29' E.
—, Grotta Testa di Morte: 42°7' N, 15°31' E.
—, I Pagliai: 42°7' N, 15°29' E.
—, Il Cretaccio: 42°7' N, 15°29' E.
—, Punta Diamante: 42°7' N, 15°29' E.
—, Punta Provvidenza: 42°6' N, 15°28' E.
—, S. Nicola: 42°7' N, 15°31' E.
Zinzulusa Bay: 40° N, 18°25' E.

DEMOSPONGIAE

HOMOSCLEROMORPHA

HOMOSCLEROPHORIDA

OSCARELLIDAE

Oscarella lobularis (Schmidt)

Halisarca lobularis Schmidt, 1862: 80

Occurrence. La Spezia, Torre Scuola, depth 2-3 m, rock and mud, diver, 5 August 1966. R.N. SP.5, SP.23.

Portofino, Punta Chiappa, depth 40 m, rock, diver, October 1962. R.N. PF.143, PF.379.

Limski Kanal, depth 1-4 m, rocks and mud, diver, 29 September 1971. R.N. LI.13.

Porto Ercole, Isolotto, depth 6-10 m, underwater cave, diver, 5 September 1962. R.N. 509.

Description. The colour in life of specimens PF.143 and PF.379 was noted as not uniform, from violet (C.C.419) to azure-green (C.C.419). Preserved specimens are brown (C.C.336).

PLAKINIDAE

Plakina monolopha Schulze

Plakina monolopha Schulze, 1880: 407

Occurrence. Gargano, Baia di Campi, depth 2-10 m, rocks and mud, diver, 4 October 1967. R.N. GAR.27.

Description. The only specimen in the collection, very small,was entirely used for a spicule preparation. Its consistency was lax, its colour light grey.

Spicules. 1) Diactines up to 94 μm. 2) Microcalthrops, rays up to 32 μm. 3) Lophotriaenes 27-40 μm.

Plakina trilopha Schulze

Plakina trilopha Schulze, 1880: 427

Occurrence. Torre a Mare, depth 18 m, conglomerates, dredge, 10 October 1967. R.N. COR.33.

Torre a Mare, depth 15 m, conglomerates, diver, 30 September 1970. R.N. COR.200.

Porto Tricase, depth 23 m, conglomerates, dredge, 18 October 1967. R.N. TRI.21.

Torre Incine, depth 10 m, underwater cave, diver, 8 July 1968. R.N. TI.10.

Leuca E., depth 4 m, superficial cave, diver, 9 July 1967. R.N. SAL.62.

Massa Lubrense, Cala di Mitigliano, depth 10 m, cave, diver, May 1979. R.N. CAB.91.

Description. COR.33: small, cushion-shaped, fleshy, pink.

COR.200: small, cushion-shaped, fleshy, white.

TRI.21: encrusting, thin, cream-pink.

TI.10: coating on *Cladocora cespitosa* (L.), cream.

CAB.91: abundant spicules found in the alimentary canal of the opisthobranch mollusc *Berthella ocellata* (Delle Chiaje). Collector: Dr. R. Cattaneo.

Spicules. 1) Diactines up to 80 µm. 2) Microcalthrops with rays up to 30 µm. 3) Lophotriaenes 16-21 µm.

Plakortis simplex Schulze

Plakortis simplex Schulze, 1880: 430

Occurrence. Palese (Bari), depth 15 m, conglomerates, dredge, 23 June 1970. R.N. COR.174.

Palese (Bari), depth 30 m, conglomerates, dredge, 23 June 1970. R.N. COR.167.

Torre Incine, depth 6-15 m, underwater cave, diver, 8 July 1968. R.N. TI.1, TI.5.

Porto Ercole, Grotta Azzurra, depth 6-12 m, superficial cave, diver, 5 September 1963. R.N. 583.

Between Cap Ferrat and Cap d'Ail, depth 48 m, detrital, dredge, 14 May 1970. R.N. NIS.43.

Leuca W., depth 0.7 m, rocky shore, 8 July 1967. R.N. SAL.45.

Leuca W., depth 1-2 m, superficial cave, diver, 10 July 1967. R.N. SAL.122.

Leuca E., depth 1-2 m, superficial cave, diver, 9 July 1967. R.N. SAL.163.

Description. Colour in life noted as follows: TI.1: very light brown, TI.5: greyish cream, COR.167: white, COR.174: white with violet tinge, SAL.163: light brown.

Spicules. 1) Diactines up to 100-135 µm in the various specimens. 2) Triactines with rays up to 38-53 µm.

Corticium candelabrum Schmidt

Corticium candelabrum Schmidt, 1862: 42

Occurrence. Gargano, Baia di Campi, depth 2-10 m, rock and mud, diver, 4 October 1967. R.N. GAR.18.

Dubrovnik, depth 30 m, dredge, 16 July 1967. R.N. DUB.5.

Tremiti Islands, Grotta delle Viole, depth 6 m, superficial cave, diver, 23 July 1968. R.N. PTR.H.11.

Tremiti Islands, Grotta delle Viole, depth 4-7 m, superficial cave, diver, 26 July 1968. R.N. PTR.H.47.

Castellabate, depth 20 m, rock, diver, 8 August 1971. R.N. CAB.31.

Ponza, depth 2-4 m, superficial cave, diver, 5 July 1969. R.N. PZ.14.

Portofino, Altare, depth about 50 m, rocks and mud, trammel, 3 June 1965. R.N. PF.35.

Bogliasco, depth 30 m, detrital, dredge, 11 November 1970. R.N. PF.211.

Porto Tricase, depth 23 m, conglomerates, dredge, 18 October 1967. R.N. TRI.9.

Castro Marina, depth 25-35 m, conglomerates, dredge, 2 February 1968. R.N. TRI.62, TRI.65.

Porto Tricase, depth 30 m, conglomerates, dredge, 24 September 1970. R.N. TRI.160.

Porto Tricase, depth 60 m, trammel, 24 September 1970. R.N. TRI.231, TRI.236, TRI.239.

Porto Ercole, Grotta Azzurra, depth 2-4 m, superficial cave, diver, August 1968. R.N. 658.

Description. The colour in life of some of these specimens has been noted as follows. GAR.18: light violet to peach, PTR.H.11: from C.C.126 to C.C.131, PTR.H.47: C.C.203, PF.35: C.C.176, TRI.9: peach, TRI.62: light brown to light violet, TRI.65: light brown, TRI.160: light brown, TRI.231, TRI.236 and TRI.239: brown.

Spicules. 1) Microcalthrops with rays up to 40 μm long. 2) Candelabra up to 32 μm.

Corticium bowerbanki Sarà

Corticium bowerbanki Sarà, 1960a: 448

Occurrence. Tremiti Islands, I Pagliai, depth 0-4 m, superficial cave, diver, 5 July 1966. R.N. PTR.C.3, PTR.C.13.

Tremiti Islands, Cala Sorrentino, depth 2-3 m, superficial cave, diver, July 1966. R.N. PTR.E.10.

Tremiti Islands, Grotta delle Viole, depth 5 m, superficial cave, diver, 23 July 1968. R.N. PTR.H.7, PTR.H.8.

Tremiti Islands, Grotta delle Viole, depth 4-7 m, superficial cave, diver, 26 July 1968. R.N. PTR.H.30.

Tremiti Islands, Grotta delle Viole, depth 4-5 m, superficial cave, diver, 13 September 1971. PTR.K.1.

Porto Tricase, depth 15 m, conglomerates, dredge, 22 September 1970. R.N. TRI.98.

Torre a Mare, depth 12-15 m, conglomerates, dredge, 25 September 1967. R.N. COR.22.

Torre a Mare, depth 15 m, conglomerates, dredge, 22 June 1970. R.N. COR.132.

Description. (Fig. 1) The specimens from the superficial caves of the Tremiti Islands are remarkable for belonging to very frequent individuals that encrust the rock walls up to an extention of half a square metre. About 3 mm thick, of firm consistency, they have the appearance of wrinkled hide. The specimens from the other stations are only very small encrustations. The colour of PTR.H.7 was about C.C.134, but less reddish; that of PTR.K.1 was light brown.

Spicules. Tetralophous microcalthrops measuring 9.4-48.2 μm.

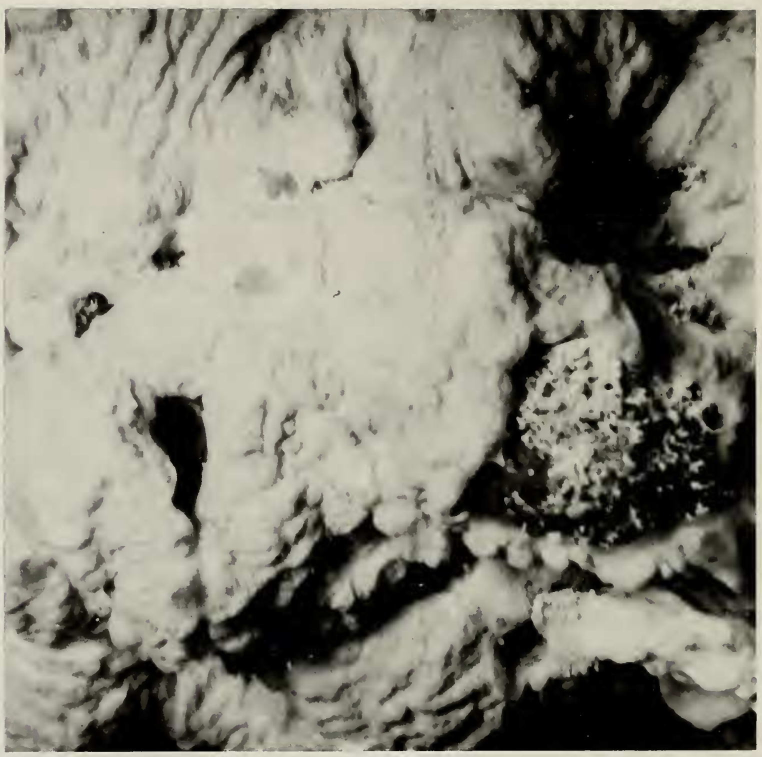

Fig. 1 - *Corticium bowerbanki*, specimen PTR.H.30. Underwater photograph. x 0.2.

Corticium topsenti Pouliquen

Corticium topsenti Pouliquen, 1972: 744

Occurrence. Massa Lubrense, Cala di Mitigliano, cave, June 1980. R.N. CAB.88.

Description. Examination of the contents of the alimentary canal of a specimen of *Berthellina citrina* (Rueppel & Leuckart) an opisthobranch mollusc, reveals the presence of abundant spicules characteristic of *Corticium topsenti*, a species hitherto known only from two caves near Marseille. The opisthobranch was collected by Dr. R. Cattaneo, at a depth of about 12 m, in a dimly illuminated part of the cave.

Corticium reductum sp. n.

Occurrence. Porto Tricase, depth 30 m, conglomerates, dredge, 24 September 1970. R.N. TRI.212.

Holotype (a spicule slide). MSNG 47151.

Description. (Fig. 2) The only specimen available was very small, encrusting, fleshy, dull yellowish-brown in life. It has been entirely used for a spicule preparation.

Spicules. Tetralophous microcalthrops measuring 26.8-60 μm across. These spicules may be more or less regular, that is having four branching actines of about the same length. Even in this case the form is variable: the branches may be numerous or reduced and thickened, or the extremity of the branches may be flattened, denticulated or bifid. A characteristic modification occurs in a large part of the spicules, to the effect that one or more actines become elongated and unbranched at their distal end. Almost invariably these elongated actines bear near their base one or two (sometimes three, but never more) strong projections suggesting that this form derives from an overgrowth of one clad of the actine at the expense of the others. There are no candelabra.

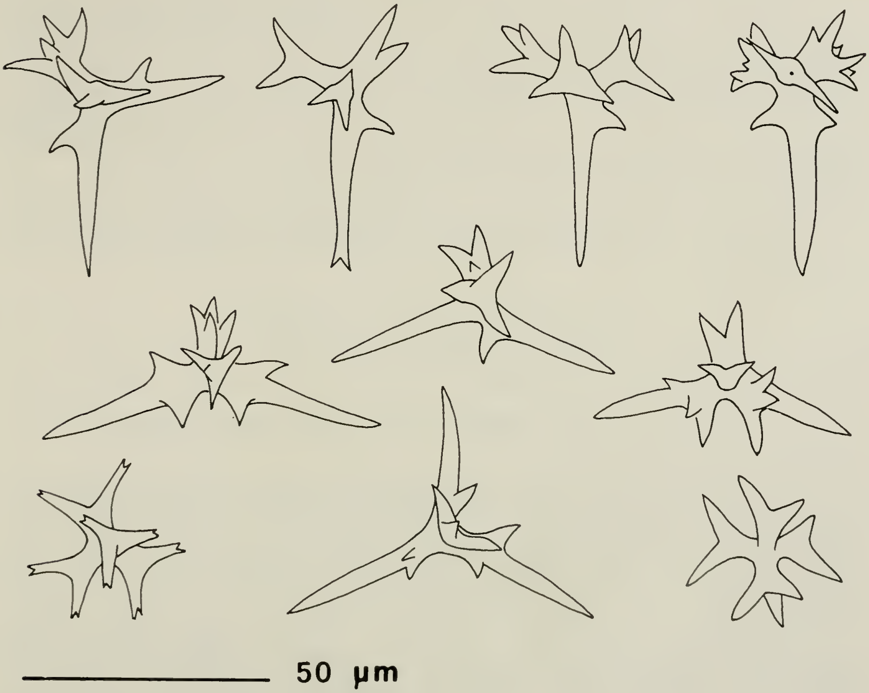

Fig. 2 - Spicules of *Corticium reductum* sp. n.

Remarks. This species is near to *Corticium bowerbanki* Sarà (1960a: 448), but the crown of spines near the base of the elongated actines characterizing the latter and the few projections, apparently reduced clads, near the base of the longer actines in the present species appear to be differently derived.

TETRACTINOMORPHA

ASTROPHORIDA

STELLETTIDAE

Stelletta lactea Carter

Stelletta lactea Carter, 1871: 9

Occurrence. S. Caterina, depth 2-3 m, rock, diver, 7 July 1967. R.N. SAL.230.

Description. Only a spicule slide is available.

Spicules. 1) Dichotriaenes very rare in the preparation. 2) Orthotriaenes with rhabdome of 350-550 μm, cladome up to 350 μm. They are frequently subject to reduction of the clads or of the rhabdome. 3) Oxeas 630-850 μm long. 4) Spherasters to oxyasters with centrum, 5-11 μm in diameter. 5) Trichodragmata made of very thin raphides, difficult to discern, about 25 μm long.

Remarks. The specimens recorded by Topsent (1904: 81) from the Azores do not seem to belong to this species.

Stelletta hispida (Buccich)

Ancorina hispida Buccich, 1886: 223

Occurrence. Gargano, Baia di Campi, depth 2-4 m, rock and mud, diver, 4 October 1967. R.N. GAR.8.

Description. The specimen is globose, 2 cm in diameter, with high and close hispidation, much sedimented, of firm consistency (very hard after preservation in spirit). The choanosome is light yellowish brown (in life and after preservation).

Spicules. 1) Oxeas up to 3600 x 75 μm. 2) Plagiotriaenes with clads more reduced than previously recorded, for instance 120 μm long in a triaene having a rhabdome of 2000 x 80 μm. 3) Chiasters about 7 μm in diameter. 4) Oxyasters about 13 μm in diameter.

Stelletta stellata Topsent

Stelletta stellata Topsent, 1893: XLIII

Occurrence. Torre a Mare, depth 18 m, conglomerates, diver, 25 September 1967. R.N. COR.30.

Torre a Mare, depth 15-30 m, conglomerates, diver, 22 June 1970. R.N. COR. 136, COR.146, COR.147.

Porto Cesareo, lagoon, depth 0.5 m, sand and rocks, 23 September 1971. R.N. PC.65b, PC.75.

Description. PC.65b was growing on a *Tethya aurantium.* PC.75, the largest specimen available, is hemispherical, 35 mm across, light orange in spirit, firm, only slightly compressible.

Spicules. 1) Oxeas up to 3600 x 85 μm. 2) Orthotriaenes about 1600 x 80 μm, clads strongly reduced or atrophied. 3) Chiasters 6-12 μm. 4) Oxyasters up to 22 μm.

Stelletta pumex (Nardo)

Tethya pumex Nardo, 1847a: 4

Occurrence. Castro Marina, Zinzulusa Bay, depth 0-0.2 m, rocky shore, 13 September 1965. R.N. ZZ.56.

Description. The specimens was found in an anfractuosity of the rock, permanently shaded. It is globose, about 9 mm in diameter, hard in spirit.

Spicules. 1) Oxeas straight, 1000-1900 x 21-43 μm. 2) Plagiotriaenes, rhabdome straight 810-1260 x 38 μm, cladome up to 220 μm. 3) Strongylasters to oxyasters 8-12 μm in diameter.

Stelletta dichoclada sp. n.

Occurrence. Off Calvi, depth 123-147 m, detrital, dredge, 15 July 1969. R.N. NIS.83.6, NIS.83.17, NIS.83.34a, NIS.83.21.

Holotype (NIS.83.34a). MSNG 47152.

Description. (Fig. 3) The specimens are small, globose to hemispherical, 5-9 mm in diameter, of firm consistency (in spirit).

Spicules. 1) Oxeas curved, 1500-2000 x 22-32 μm. 2) Dichotriaenes regular, rhabdome 700-1100 x 32-54 μm, cladome 270-500 μm, deuteroclads same length or, more often, longer than the protoclads. 3) Oxyasters with centrum, 10-23 μm in diameter. They are not separable in categories; the centrum has about the same size in the smaller as in the larger ones.

Remarks. A near relative of this species appears to be *Stelletta freitasi* Lévi (1964: 387) from Mozambique.

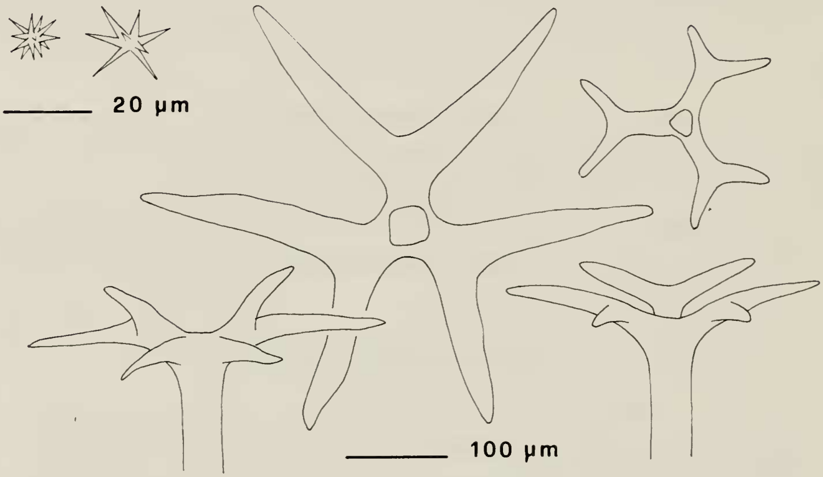

Fig. 3 - Triaenes and asters of *Stelletta dichoclada* sp. n.

Stelletta defensa sp. n.

Occurrence. Off Calvi, depth 121-149 m, detrital, dredge, 14-15 July 1969. R.N. NIS.85.3, NIS.83.36.

Holotype (NIS.83.36). MSNG.47153.

Paratype (NIS.85.3). MSNG.47154.

Description. (Fig. 4) The two specimens are globose, measuring respectively about 5 and 7 mm in diameter. The consistency, in spirit, is tough. The cortex, not quite distinct, is about 1 mm thick. A conspicuous hispidation, about 1 mm high, is made mostly by dichotriaenes.

Spicules. 1) Oxeas measuring up to more than 2800 µm (broken in the preparations) by 54 µm. 2) Dichotriaenes, rhabdome about 1500 x 85 µm, cladome up to 530 µm. The proportion in length between protoclads and deuteroclads is variable. 3) Plagiotriaenes, rhabdome 1000-1650 x 22-45 µm, clads 100-200 µm. 4) Strongylasters without centrum, 10-16 µm in diameter.

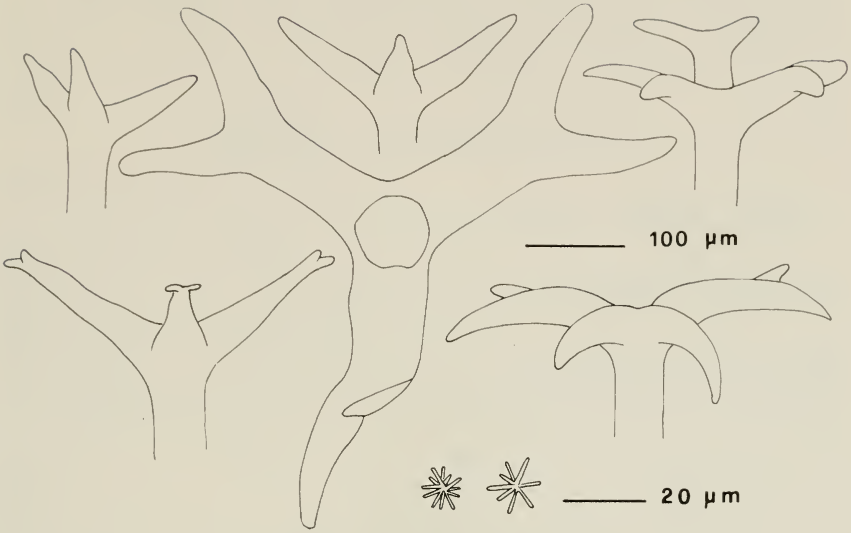

Fig. 4 - Triaenes and asters of *Stelletta defensa* sp. n.

Remarks. This sponge appears related to some Indo-Pacific species, as *Stelletta agulhana* Lendenfeld, *S. gigantea* Tanita, *S. aruensis* Hentschel.

Stelletta sp.

Occurrence. Panarea, depth 1-2 m, rock, diver, 15 August 1971. R.N. PAN.10b.

Tremiti Islands, Punta Provvidenza, depth 3-5 m, rocky shore, diver, July 1966. R.N. PTR.F.10.

Leuca E., depth 0.5-1 m, superficial cave, 9 July 1967. R.N. SAL.158.

Description. (Fig. 5) All three specimens were minute encrustations.

Spicules. 1) Oxeas straight or slightly curved, 800-1500 x 11-33 µm. 2) Plagiotriaenes, rhabdome 470-830 x 21-33 µm, cladome mostly less than 100 µm, a little wider in specimen SAL.158. Reductions of the clads are frequent. 3) Chiasters to oxyasters, centrum small or absent, diameter 5-14 µm.

Remarks. This spiculation is very close to that of *Myriastra digitifera* Lévi (1959: 118) from the Gulf of Guinea.

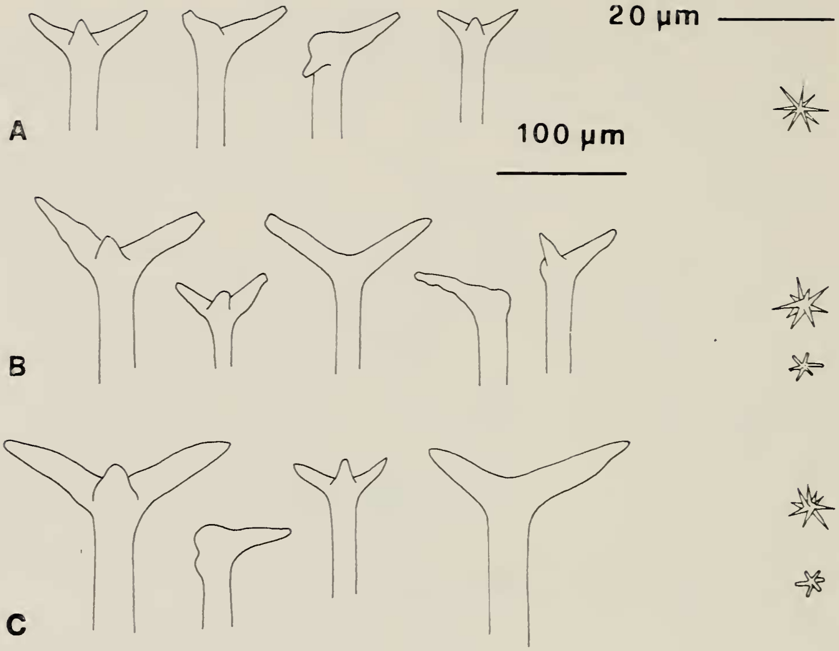

Fig. 5 - Triaenes and asters of *Stelletta* sp. A: PNA.10b, B: PTR.F.10, C: SAL.158.

Penares helleri (Schmidt)

Stelletta helleri Schmidt, 1864: 32

Occurrence. Porto Ercole, Grotta Azzurra, depth 6-12 m, superficial cave, diver, 5 September 1963. R.N. 580a.

Castro Marina, Zinzulusa Bay, depth 1-3 m, rocky shore, diver, 8 July 1967. R.N. ZZ.36, ZZ.38, ZZ.39b.

Torre Incine, depth 6-15 m, underwater cave, diver, 8 July 1968. R.N. TI.7.

Bogliasco, depth 15 m, conglomerates, diver, 11 November 1970. R.N. PF.247.

Castellabate, depth 5 m, rock, diver, 23 August 1971. R.N. CAB.42.

S. Caterina, depth 1-2 m, rocky shore, diver, 7 July 1967. R.N. SAL.3, SAL.13.

Leuca E., depth 2-3 m, superficial cave, diver, 9 July 1967. R.N. SAL.66, SAL.152.

Porto Tricase, depth 15 m, conglomerates, dredge, 22 September 1970. R.N. TRI.104, TRI.186, TRI.188.

Porto Tricase, depth 30 m, conglomerates, dredge, 24 September 1970. R.N. TRI.165.

Description. All the specimens are amorphous fragments. The colour in life has been noted for some of them: ZZ.38: exterior orange C.C.246, interior C.C.233; PF.247: orange-red; SAL.13: dark brown; SAL.66: greyish brown; TRI.104: cream; TRI.165: brown.

Spicules. 1) Oxeas 1000-1500 x 15-35 μm. 2) Dichotriaenes, rhabdome 200-400 x 25-40 μm, cladome 150-330 μm. 3) Microxeas 30-240 μm, sometimes moderately centrotylote. 4) Oxyasters 13-50 μm.

Stryphnus mucronatus (Schmidt)

Stelletta mucronata Schmidt, 1868: 19.

Occurrence. Castro Marina, depth 25-35 m, conglomerates, dredge, 2 February 1968. R.N. TRI.84.

Description. The specimen, entirely used for preparations, was amorphous, fleshy, hispid, black.

Spicules. 1) Oxeas about 2000 μm. 2) Dichotriaenes 360-480 μm. 3) Amphiasters about 13 μm. 4) Oxyasters up to 35 μm in diameter.

GEODIIDAE

Geodia cydonium (Jameson)

Alcyonium cydonium Jameson, 1811: 563

Occurrence. Gargano, Baia di Campi, depth 3-4 m, rock and mud, diver, 15-21 September 1971. R.N. GAR.48.

Limski Kanal, depth 1-4 m, rock, diver, 29 September 1971. R.N. LI.9.

Crete, Gournia, depth 3 m, superficial cave, diver, 20 September 1969. R.N. CRT.11.

Porto Cesareo, lagoon, depth 0.5-1 m, sand and rock, 23 September 1971. R.N. PC.73, PC.85.

Taranto, Mar Piccolo, depth 4 m, detrital, diver, 20 September 1971. R.N. PC.104.

Castro Marina, depth 0-0.2 m, rocky shore, 13 September 1965. R.N. ZZ.46.

Porto Ercole, Grotta Azzurra, depth 1-6 m, superficial cave, diver, September 1962. R.N. 531.

Porto Ercole, Isolotto, depth 0-1 m, superficial cavity, 9 September-31 August 1963. R.N. 556, 582.

Description. Most specimens were small, more or less globose, encrusting in one case (531). Remarkable was the size (40 cm and more) reached by the very abundant specimens present on the bottom of the lagoon south of Porto Cesareo. Only fragments have been kept.

Spicules. 1) Oxeas 1000-2500 μm. 2) Oxeas 300-600 μm. 3) Orthotriaenes 800-3000 μm. 4) Protriaenes 1200-3500 μm. 5) Anatriaenes 2000-4000 μm. 6) Sterrasters 40-70 μm. 7) Chiasters 8-15 μm. 8) Spherasters 10-20 μm. 9) Oxyasters 20-40 μm.

Geodia conchilega Schmidt

Geodia conchilega Schmidt, 1862: 51

Occurrence. Porto Tricase, depth 15 m, conglomerates, dredge, 24 September 1970. R.N. TRI.195, TRI.199, TRI.208, TRI.209, TRI.210, TRI.283.

Bari Palese, depth 21 m, conglomerates, dredge, 25 October 1967. R.N. COR.50.

Bari Palese, depth 15-30 m, conglomerates, dredge, 17 June 1970. R.N. COR.90, COR.121, COR.169.

Mola, depth 20 m, conglomerates, dredge, 8 November 1967. R.N. COR.66.

Torre a Mare, depth 15 m, conglomerates, diver, 22 June 1970. R.N. COR.131, COR.133, COR.23, COR.197.

Torre a Mare, depth 15 m, conglomerates, diver, 30 September 1970. R.N. COR.191, COR.199.

Riva Trigoso, Punta Manara, depth 32 m, boulders, diver, 30 October 1970. R.N. PF.167, PF.168, PF.174, PF.175, PF.177, PF.182, PF.187.

Bogliasco, depth 7-11 m, rock, diver, 11 November 1970. R.N. PF.230, PF.232, PF.262.

Recco, depth 14-20 m, conglomerates, diver, August 1970. R.N. PF.289, PF.293.

Gargano, Baia di Campi, depth 2-10 m, rock and mud, diver, 4 October 1967. R.N. GAR.9, GAR.24, GAR.26.

Gargano, Baia di Campi, depth 2-10 m, rock and mud, diver, 15-21 September 1971. R.N. GAR.56.

Between Cap Ferrat and Cap d'Ail, depth 76 m, dredge, 15 September 1971. R.N. NIS.51.

Description. All the specimens were very small, globose or encrusting or insinuating in cavities of conglomerates. Most of them have been entirely used for spicule preparations.

Spicules. 1) Oxeas 1400-2500 μm. 2) Ortho-dichotriaenes 1500-2300 μm. 3) Anatriaenes 2000-4000 μm. 4) Sterrasters 110-130 μm (those of specimens COR.23 and COR.197 do not exceed respectively 88 and 82 μm). 5) Chiasters 4-8 μm. 6) Spherasters about 28 μm.

Caminus vulcani Schmidt

Caminus vulcani Schmidt, 1862: 48

Occurrence. Torre a Mare, depth 15 m, conglomerates, diver, 30 September 1970. R.N. COR.193.

Description. The specimen, very small, was found underneath a *Spirastrella cunctatrix*.

Spicules. 1) Strongyles about 750 x 13.5 μm. Orthotriaenes, rhabdome about 510 x 14 μm, clads 350 x 14 μm. 3) Sterrasters 97-118 in largest diameter. 4) Oxyasters with two to five (rarely six) rays up to about 30 μm long. 5) Spherules, 2.7-5.4 μm in diameter.

Isops intuta (Topsent)

Cydonium intutum Topsent, 1892b: XVIII

Occurrence. Between Cap Ferrat and Cap d'Ail, depth 76 m, dredge, 15 September 1971. R.N. NIS.65.14.

Tremiti Islands, Caprara, Cala Sorrentino, depth 2 m, superficial cave, diver, July 1966. R.N. PTR.E.20.

Description. Both specimens are small, cushion-shaped, light brown in spirit.

Spicules. 1) Oxeas 1100-2000 x 9-16 μm. 2) Dichotriaenes, cladome about 590 μm, protoclads about as long as the deuteroclads. 3) Sterrasters for the most part almost spherical, up to 55 μm in diameter. 4) Oxyasters many-rayed, about 15 μm in diameter. 5) Spherasters to spherules, irregular, 6-8 μm in diameter.

Erylus discophorus (Schmidt)

Stelletta discophora Schmidt, 1862: 47

Occurrence. Crete, Agio Nicolaos, depth 1 m, superficial cave, 22 September 1969. R.N. CRT.16, CRT.17, CRT.31.

Castro Marina, Zinzulusa Bay, depth 0-0.2 m, rocky shore, 15 September 1965. R.N. ZZ.49, ZZ.55.

Panarea, depth 1-4 m, rock, diver, 15 August 1971. R.N. PAN.11, PAN.16, PAN.39.

Bari Palese, depth 15-30 m, conglomerates, dredge, 17 June 1970. R.N. COR.93, COR.111.

Bari, depth 30 m, conglomerates, dredge, 23 June 1970. R.N. COR.165.

Torre a Mare, depth 15 m, conglomerates, dredge, 30 September 1970. R.N. COR.196.

Porto Tricase, depth 23 m, conglomerates, dredge, 18 October 1967. R.N. TRI.32.

Porto Tricase, depth 30 m, conglomerates, dredge, 24 September 1970. R.N. TRI.150.

Porto Ercole, Isolotto, depth 1 m, superficial cave, 9 September 1963. R.N. 552.

Castellabate, depth 20 m, rock, diver, 8 August 1971. R.N. CAB.35.

Leuca W., depth 2-3 m, superficial cave, diver, 10 July 1967. R.N. SAL.109, SAL.145.

Leuca E., depth 2-3 m, superficial cave, diver, 9 July 1967. R.N. SAL.157, SAL.160, SAL.168.

Bogliasco, depth 7 m, rock, diver, 11 November 1970. R.N. PF.225.

Tremiti Islands, Caprara, Cala Sorrentino, depth 2-3 m, superficial cave, diver, July 1966. R.N. PTR.E.2.

Description. All the specimens were very small, encrusting or insinuating; most of them have been entirely used for spicule preparations. The colour in life was noted as white, cream, brownish.

Spicules. 1) Oxeas 500-1600 μm. 2) Dichotriaenes 250-750 μm. 3) Aspidasters 40-110 μm. 4) Oxyasters 12-40 μm. 5) Microrhabds 12-60 μm.

Remarks. The variability in size and shape of the aspidasters and of the microrhabds observed in the numerous specimens of this collection does not confirm the view, which I expressed in a previous paper (1972: 339), of a specific distinction between *Erylus discophorus* and *E. mamillaris.*

Erylus euastrum (Schmidt)

Stelletta euastrum Schmidt, 1868: 20

Occurrence. Porto Tricase, depth 30 m, conglomerates, dredge, 24 September 1970. R.N. TRI.166, TRI.181.

Porto Tricase, depth 15 m, conglomerates, dredge, 22 September 1970. R.N. TRI.89, TRI.141.

Porto Tricase, depth 25 m, conglomerates, dredge, 16 November 1967. R.N. TRI.40, TRI.46, TRI.47.

Castro Marina, depth 25-35 m, conglomerates, dredge, 2 February 1968. R.N. TRI.79.

Castro Marina, Zinzulusa Bay, depth 2-4 m, rocky shore, diver, 8 July 1967. R.N. ZZ.11, ZZ.25, ZZ.31, ZZ.42b.

Torre a Mare, depth 30 m, conglomerates, diver, 22 June 1970. R.N. COR.160.

Dubrovnik, depth 20 m, detrital, dredge, 16 July 1967. R.N. DUB.14, DUB.18.

Capraia, depth 20 m, boulders, diver, 24 September 1964. R.N. CPR.7.

Riva Trigoso, Punta Manara, depth 32 m, rock, diver, 30 October 1970. R.N. PF.179, PF.183, PF.198.

Bogliasco, depth 15 m, conglomerates, diver, 11 November 1970. R.N. PF.246, PF.256.

Recco, depth 14-20 m, conglomerates, diver, August 1970. R.N. PF.296.

Porto Ercole, Isolotto, depth 6-10 m, superficial cave, diver, September 1962. R.N. 503.

Porto Ercole, Grotta Azzurra, depth 6-12 m, superficial cave, diver, 5 September 1963. R.N. 576.

Castellabate, depth 20 m, rock, diver, 8 August 1971. R.N. CAB.30, CAB.34.

Castellabate, depth 11 m, July 1971. R.N. CAB.47.

Between Cap Ferrat and Cap d'Ail, depth 48 m, detrital, dredge, 13 October 1971. R.N. NIS.41, NIS.41.1, NIS.55, NIS.55.4.

Between Cap Ferrat and Cap d'Ail, depth 76 m, detrital, dredge, 15 September 1971. R.N. NIS.51.6.

Off Calvi, depth 100 m, detrital, dredge, 4 August 1970. R.N. NIS.56.1.

Banc du Magaud, depth 140-160 m, detrital, dredge, 19 September 1969. R.N. NIS.86.29.

Ponza, depth 0-6 m, superficial cave, diver, 5 July 1969. R.N. PZ.11.

Portofino, Vessinaro, depth about 50 m, rocks, trammel, August 1965. R.N. PF.73.

Description. All the specimens available are small, irregularly massive, cushion-shaped or encrusting. R.N. 503, the largest one, consists of two conical processes 30 mm high, with oscules on top. Its surface (in the dry state) is strongly wrinkled. The colour in life was noted as cream to light brown.

Spicules. 1) Oxeas 800-1200 μm. Stylote and strongylote modifications are frequent. 2) Orthotriaenes and dichotriaenes, cladome

400-800 μm. 3) Aspidasters 100-160 μm. 4) Oxyasters 28-60 μm. 5) Oxyasters 10-15 μm. 6) Microxeas (microrhabds) 30-75 μm.

Erylus papulifer sp. n.

Occurrence. Off Calvi, depth 135 m, detrital, trawl, 18 July 1975. R.N. NIS.12.9, NIS.19.4a, NIS.19.4b, NIS.19.4c.

Off Calvi, depth 121-149 m, detrital, dredge, 14-16 July 1969. R.N. NIS.70.3, NIS.85.22.

Holotype (NIS.19.4a). MSNG.47155.

Paratypes (NIS.19.4b, c). MSNG.47156.

Description. (Fig. 6, 7) The specimens are globular, tough. The largest, NIS.19.4a, has a diameter of 25 mm, the other ones measure from 7 to 11 mm. The oscular openings are on rounded elevations measuring 0.2-0.5 mm. These papules are scattered without order, sparse or close together; rarely they may acquire the development of a small chimney, 1.5 mm high and as much wide.

Spicules. 1) Oxeas measuring 600-1400 μm by up to 18.5 μm. 2) Dichotriaenes frequent and regular, with short rhabdome, cladome

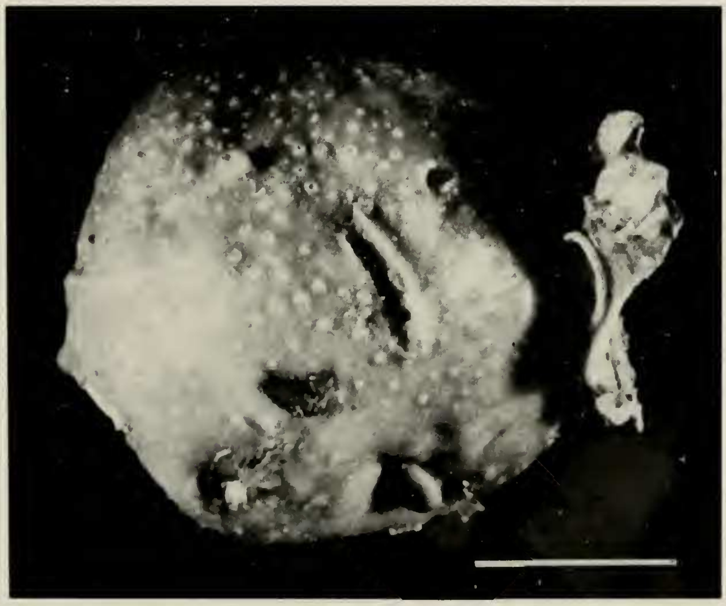

Fig. 6 - *Erylus papulifer* sp. n. Specimen NIS.19.4a (in spirit). Scale: 1 cm.

measuring from 450 to 1100 µm. Generally, protoclads and deuteroclads have the same length, but some variations may occur. 3) Triaenes regular with short rhabdome, clads straight 200-450 µm long, very rare. 4) Aspidasters very uniform in shape and size. An average one measures 178 x 156 µm; the largest diameter never exceeds 200 µm. The thickness is 6-8 µm. Irregularities and anomalies are very rare.

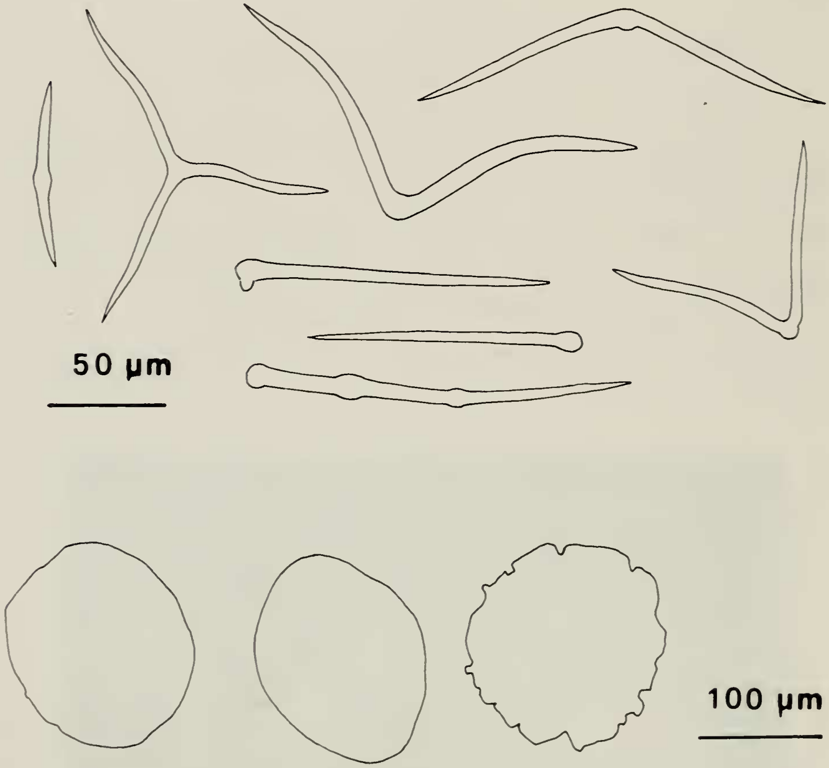

Fig. 7 - Microscleres of *Erylus papulifer* sp. n.

5) Microxeas slightly centrotylote, stout, with blunt ends, uniform in shape and size, measuring 50-80 x 3-5 µm. 6) Oxyasters in the form of a triactine with flexuous, slender rays 41-87 µm long. These spicules are not very frequent. 7) Oxyasters diactinal, toxiform, with or without a trace of an aborted third ray. The rays measure from 45 to 124 µm. These spicules are plentiful in all the specimens. 8) Oxyasters mo-

nactinal, with the proximal end showing a more or less irregular bulge, clearly a vestige of lost actines. They measure 90-160 µm. These spicules are present in all the specimens, but with variable abundance; in specimen NIS.85.22 they are generally polytylote.

Remarks. Nearest to *Erylus expletus* Topsent (1927: 2) this species differs from it in many spicular details, the principal one being the shape and size of the aspidasters.

Erylus corsicus sp. n.

Occurrence. Off Calvi, depth 121-149 m, detrital, dredge, 14 July 1969. R.N. NIS.85.14.

Holotype (a spicule slide). MSNG 47157.

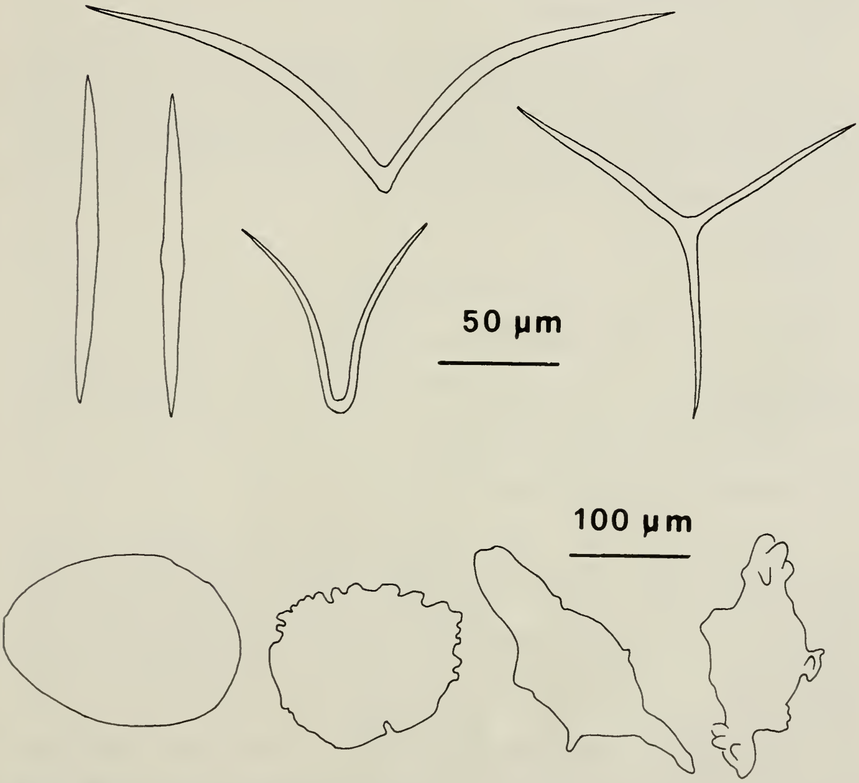

Fig. 8 - Microscleres of *Erylus corsicus* sp. n.

Description. (Fig. 8) The single available specimen was globular, with short processes, tough, so small that it has been entirely used for a spicule preparation.

Spicules. 1) Triaenes (only two observed), clads 280-300 x 8 μm, rhabdome short. 2) Oxeas measuring 610-1220 μm by 5.5-14 μm. 3) Aspidasters measuring from 167 x 113 μm to 226 x 162 μm, about 7 μm thick. Their shape is from regular to very irregular; often some projections rise from their surface. 4) Microxeas very abundant, uniform in shape but with a wide range of size, 48-160 x 1-8 μm. They are stout, with sharp points, generally very faintly centrotylote. 5) Oxyasters in the form of a triactine, with rays measuring about 95 x 2.5 μm, flexuous. These spicules are rare. 6) Oxyasters in the shape of a toxiform diactine with symmetrical rays uniformly curved, 85-160 μm long. A trace of an aborted third ray may be present or not. These spicules are fairly frequent.

Remarks. For the presence of « pseudotoxas » and the absence of a smaller category of oxyasters, this species may be compared with *Erylus expletus* Topsent (1927: 2) and with *E. papulifer* sp. n. described above. From both it is mainly set apart by the character of its aspidasters and by the size range of its microxeas.

CALTHROPELLIDAE

Calthropella inopinata sp. n.

Occurrence. Off Camogli, depth about 60 m, trawl, October 1962. R.N. PF.305,PF.306.

Holotype (PF.306). MSNG 47158.

Paratype (PF.305). MSNG 47159.

Description. (Fig. 9,10) PF.306 is an irregularly lobate, discontinuous mass, with rounded outline, roughly cake-shaped, measuring 15 x 12 x 2 cm. PF.305, irregularly massive, measures about 10 x 6 x 2 cm. Both specimens are in the dry state, light yellowish brown, almost stony hard. The surface is even, there are no recognizable oscules, there is no apparent trace of attachment.

Spicules. 1) Calthrops very abundant, whith rays ranging from 34 μm to 600 μm. Normally-formed calthrops are rare, particularly among the larger spicules; for the most part they are strongly reduced and deformed. Among the smaller calthrops there is a form more or less regular and frequent: a tetractine (sometimes triactine) with a rounded central eminence that may be interpreted as an aborted supplementary actine or as a prolongation of a pseudorhabdome. 2) Oxeas

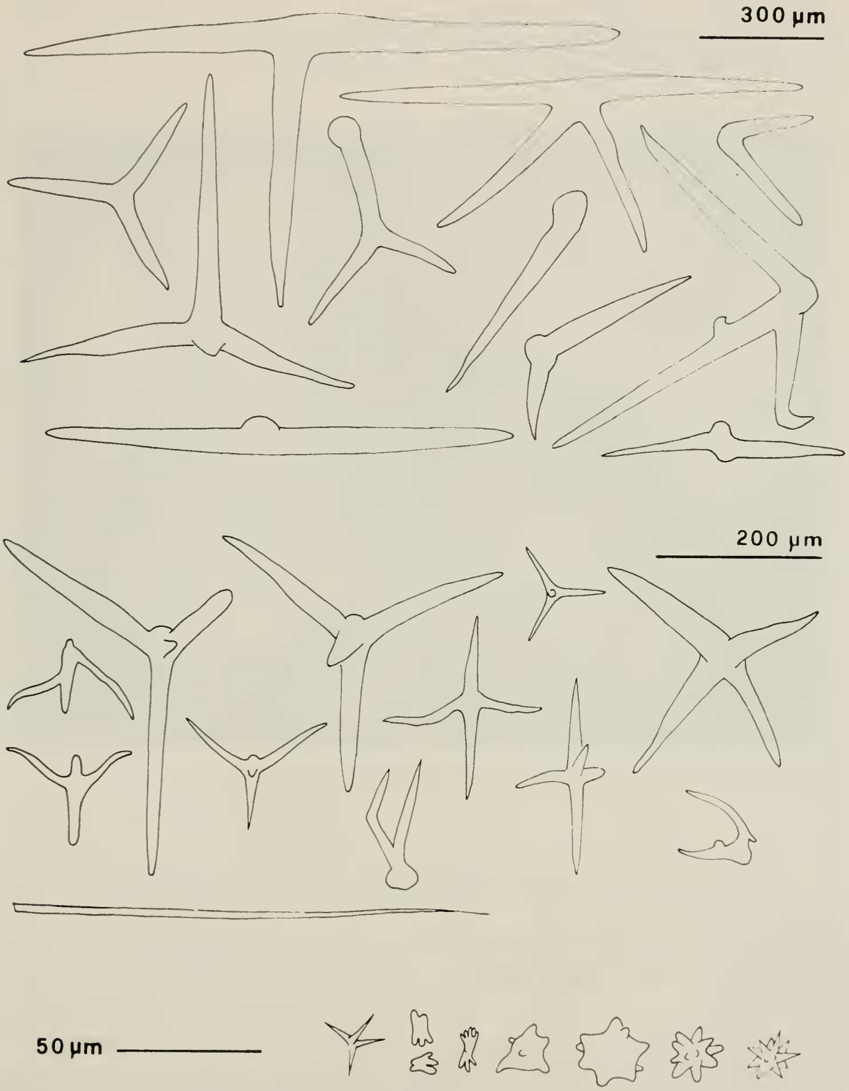

Fig. 9 - Spicules of *Calthropella inopinata* sp. n.

about 2000 μm long, not more than 15 μm thick (possibly longer, as they are all broken in the preparations). They are characterized by a wide axial canal and by extremely elongated, flexuous points. 3) Oxyasters without centrum, with two to six thin rays microspined, 8-17 μm long. 4) Strongylasters to spherasters more or less regular to extremely irregular globose masses bearing a few tubercles or lobes. These microscleres, showing infinite variations of shape, do not appear separable in categories. They measure 5-22 μm in diameter.

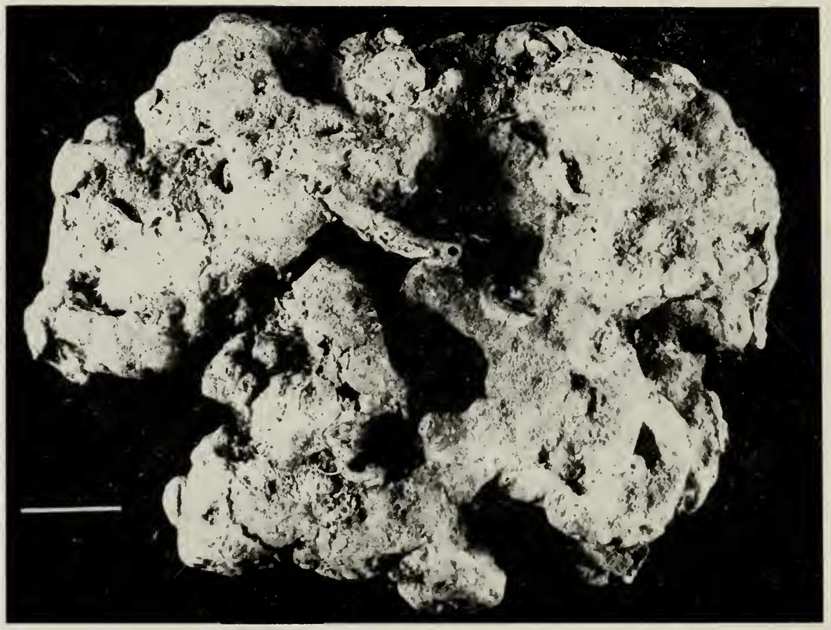

Fig. 10 - *Calthropella inopinata* sp. n. Specimen PF.306 (dry). Scale: 2 cm.

Remarks. This species appears nearest to *Calthropella geodioides* (Carter), from which it differs for the extreme tendency to deformity of its calthrops, for its oxeas three times as long and having peculiarly elongated and flexuous points, for the irregularity of some of its asters. In the same time, it is opportune to note that TOPSENT (1892a: Pl. 8, Fig. 9) figured for *C. simplex* Sollas a small, irregularly massive aster quite equivalent to those present in my specimens. It is also worthy of attention that a calthrop bearing a rounded rudiment of a supplementary actine, described above as frequent and rather constant in shape, has been figured not only by CARTER (1876: Pl. 14, Fig. 23) for *C. geodioides*, but also by SCHMIDT (1868: Pl. 3, Fig. 4) for *C. pathologica*. In connection with the latter species, it has been also figured by VACELET (1969: Fig. 3, a, 1) and by POULIQUEN (1972: Pl. 8, Fig. 3, d).

As *C. pathologica*, *C. geodioides* (which includes *C. simplex*) and the present species have basically the same spiculation, it is possible that we are dealing with a single, variable species. At the moment, however, it seems more useful to a future reviser to distinguish the samples available in this collection with a distinct specific name.

PACHASTRELLIDAE

Dercitus plicatus (Schmidt)

Corticium plicatum Schmidt, 1868: 2

Occurrence. Mola, depth 20 m, conglomerates, dredge, 8 November 1967. R.N. COR.67.

Palese (Bari), depth 15 m, conglomerates, dredge, 17 June 1970. R.N. COR.101, COR.122.

Torre a Mare, depth 15 m, conglomerates, dredge, 22 June 1970. R.N. COR.127, COR.145, COR.188.

Porto Tricase, depth 25 m, conglomerates, dredge, 16 November 1967. R.N. TRI.39.

Porto Tricase, depth 15 m, conglomerates, dredge, 24 September 1970. R.N. TRI.190.

Porto Tricase, depth 60 m, trammel, 24 September 1970. R.N. TRI.223, TRI.253.

Riva Trigoso, Punta Manara, depth 32 m, rock, diver, 30 October 1970. R.N. PF.159, PF.163, PF.200.

Bogliasco, depth 7-15 m, conglomerates, diver, 11 November 1970. R.N. PF.224, PF.229, PF.260.

Recco, depth 14-20 m, conglomerates, diver, August 1970. R.N. PF.298, PF.299.

Between Cap Ferrat and Cap d'Ail, depth 76 m, detrital, dredge, 15 September 1971. R.N. NIS.51.4, NIS.65.12.

Banc du Magaud, depth 100 m, detrital, dredge, 19 September 1969. R.N. NIS.66.7.

Leuca W., depth 1-2 m, rocky shore, diver, 10 July 1967. R.N. SAL.79.

Description. All the specimens were small, amorphous, mostly insinuating in cavities of the conglomerates. Colours were noted as white, pink, violet, brown.

Spicules. 1) Calthrops - plagiotriaenes, rays 40-200 μm. 2) Dichotriaenes, cladome 60-210 μm. They may be dominating, or rare, or missing. 3) Spiny microrhabds 10-20 μm.

Pachastrella monilifera Schmidt

Pachastrella monilifera Schmidt, 1868: 15

Occurrence. Torre a Mare, depth 18 m, conglomerates, dredge, 10 October 1967. R.N. COR.47.

Porto Tricase, depth 60 m, conglomerates, trammel, 24 September 1970: TRI.259.

Gulf of Genoa, depth about 300 m, trawl, 25 September 1964. R.N. PF.95.

Gulf of Genoa, depth about 200 m, trawl, October 1962. R.N. PF.139.

Description. COR.47: minute, insinuating. TRI.259: two specimens irregularly massive, measuring 8 cm in largest diameter. PF.139: irregularly massive, measuring 14 cm in maximum diameter, without apparent base of attachment. PF.95: a fragment attached to a subfossil *Lophelia prolifera.*

Spicules. 1) Oxeas up to 3500 μm and more, comparatively thin. 2) Oxeas 100-300 μm. 3) Calthrops - plagiotriaenes, rays or clads up to 550 μm. 4) Microrhabds 10-18 μm. 5) Metasters - amphiasters 8-14 μm.

Remarks. Specimen PF.95 is remarkable for the abundance, stoutness and uniformity of its microrhabds. Measuring 13.4-16.1 μm by about 8 μm, they are smooth, ellipsoidal, rarely very faintly centrotylote: they are as figured by SCHMIDT (1870: Pl. VI, Fig. 4) for *Pachastrella abyssi* and even more regularly oval than those figured by LENDENFELD (1894) for *P. ovisternata.* Elongated forms, centrotylote, more or less rough, as generally present in this species, have not been observed.

Sphinctrella horrida Schmidt

Sphinctrella horrida Schmidt, 1870: 65

Occurrence. Gulf of Genoa, depth about 500 m, trawl, 11 November 1970. R.N. PF.268.

Description. This species is represented by a fragment, growing on a subfossil *Lophelia prolifera.*

Spicules. 1) Oxeas 3000-3500 μm by up to 100 μm. 2) Oxeas 5000 μm and more by 10-30 μm. 3) Triaenes with a rhabdome variable in length, from little more than the size of the clads up to 1100 μm, clads 240-270 μm. 4) Microxeas roughened, faintly annulated, measuring 150-500 μm by 2.5-11 μm. 5) Metasters up to about 45 μm. Spirasters have not been observed.

Remarks. The present record is new for the Mediterranean Sea.

Sphinctrella gracilis Sollas

Sphinctrella gracilis Sollas, 1888: 89

Occurrence. Off Calvi, depth 139-142 m, detrital, dredge, 16 July 1969. R.N. NIS.70.2.

Off Calvi, depth 135 m, detrital, trawl, 18 June 1975. R.N. NIS.11.3.

Banc du Magaud, depth 170 m, dredge, 19 September 1969. R.N. NIS.28.

South of Portofino, depth about 500 m, trawl, R.N. PF.452, PF.453, PF.455, PF.456.

Description. (Fig. 11) The specimens marked NIS are very small fragments, all showing some trace of oscular fringes. The specimens marked PF are also small, insinuating among the branches of fragmented, subfossil *Lophelia prolifera.*

Spicules. 1) Calthrops fairly abundant, with rays up to 900 µm long, conical, straight. They are for the most part regular, but some malformations may occur. 2) Oxeas curved, up to 4000 x 90 µm in the specimens PF, weaker in the specimens NIS. 3) Oxeas about 16 µm thick, apparently longer than 5000 µm (broken in the preparations).

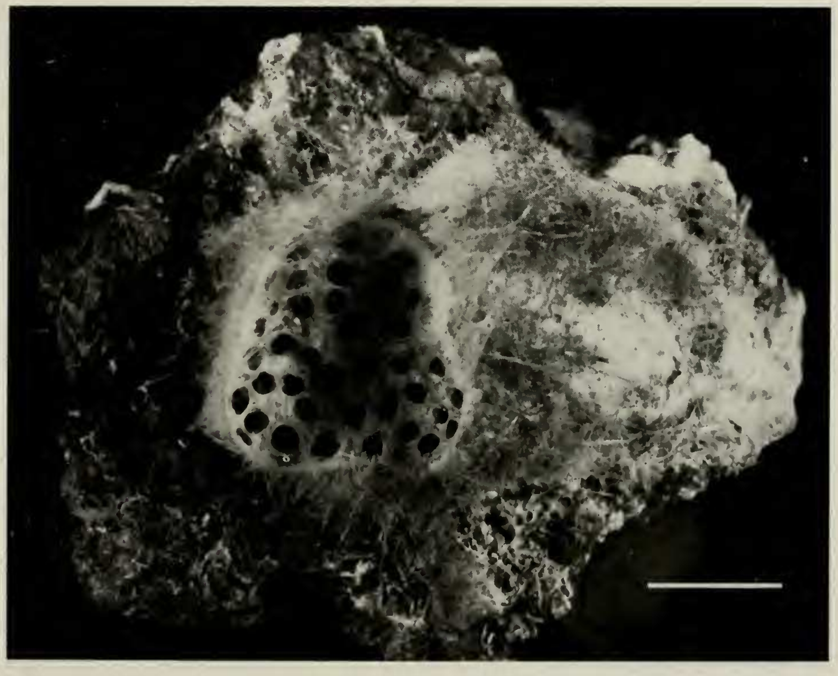

Fig. 11 - Oscule of *Sphinctrella gracilis* (specimen PF.452). Scale: 0.5 cm.

4) Microxeas ranging from 70 x 1 µm to 370 x 9.2 µm. In the specimens NIS these spicules are rather irregularly nodulose and centrotylote (the tyle may reach 14 µm); in the specimens PF they are not centrotylote, or very faintly so; their surface appears, in the middle-sized and larger ones, rather regularly ondulated by ridged annulations. 5) Metasters, about 25 µm in diameter, may be very rare or fairly abundant in the various specimens. Spirasters, about 15 µm long, are always very rare.

Sphinctrella verrucolosa sp. n.

Occurrence. Off Calvi, depth 123-147 m, detrital, dredge, 15 July 1969. R.N. NIS.83.20.

Holotype. MSNG 47160.

Description. (Fig. 12) The specimen is massive, about 20 x 13 x 10 mm, compressible, attached to a fragment of conglomerate, hispidated by long oxeas, with large fringed oscules.

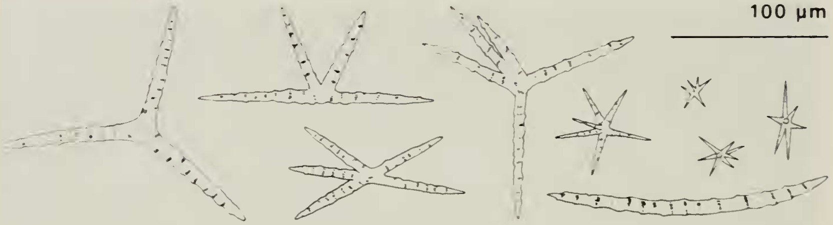

Fig. 12 - Triods, calthrops, plesiasters of *Sphinctrella verrucolosa* sp. n.

Spicules. 1) Oxeas 630-3000 µm. 2) Oxeas longer (broken in the preparations), about 10 µm thick. 3) Microtriods to microcalthrops with spirally verrucose surface, with two to six actines (mostly three or four) reaching a maximum length of 81 µm and a thickness of 5.5 µm. The smaller of these spicules pass to plesiasters having a variable number of actines with roughened surface. 4) Microxeas having the same ornamentation as the larger triods, measuring about 175 x 5.5 µm. Very few of them, by an abrupt bend or central swelling, suggest a derivation from the latter; otherwise, they have the uniformly curved shape of a regular oxea. 5) Spirasters to amphiasters to metasters, 8 to 40 µm in diameter.

Remarks. By admitting a considerable variability in spiculation, this species might be included in the group of sponges that have been synonymized as *Sphinctrella annulata* (Carter) by Topsent (1923: 5). But some differences seem worthy of note. The calthrops of this specimen do not correspond to the « quadriradiates » of *Tisiphonia annulata* Carter; the size of their actines, not exceeding 81 x 5.5 μm, is much smaller than in *Tisiphonia annulata* (240 x 21 μm), in *Stellettinopsis annulata* Schmidt (140 x 22 μm), in *Sphinctrella ornata* Sollas (200 μm) and in a specimen from Amboina described by Topsent (1897: 435) (275 μm). Stout microxeas – here abundant – have been mentioned only in connection with *Sphinctrella ornata*, but as very rare modifications of the triods. The finely and thickly spined oxea measuring 520 x 20 μm, observed by Topsent in the type of *Stellettinopsis annulata*, is here absent. There are here no raphides as in Topsent's samples from the Azores.

Poecillastra compressa (Bowerbank)

Ecionemia compressa Bowerbank, 1866: 55

Occurrence. Off Calvi, depth 137 m, detrital, trawl, 17 July 1975. R.N. NIS.27.3, NIS.27.4, NIS.27.5.

Off Calvi, depth 155 m, detrital, trawl, 18 July 1975. R.N. NIS.69.2, 69.3.

Off Calvi, depth 123-147 m, detrital, dredge, 15 July 1969. R.N. NIS.87.11, NIS.87.16.

Description. The specimens available are comparatively large fragments, without base of attachment, of flattened sponges. The largest (NIS.27.3) is 8 cm across, 0.5 cm thick. The colour is light brown (in spirit) or whitish (dry).

Spicules. 1) Oxeas 300-1500 μm. In specimen NIS.27.3 many of them are markedly and irregularly centrotylote. 2) Calthrops, rays 150-300 μm. 3) Microxeas spiny, often centrotylote, 70-160 μm. 4) Asters various (plesiasters, amphiasters, spirasters) 10-30 μm.

Poecillastra amygdaloides (Carter)

Pachastrella amygdaloides Carter, 1876: 406

Occurrence. Off Calvi, depth 139-142 m, detrital, dredge, 16 July 1969. R.N. NIS.70.1.

South of Portofino, depth about 200 m, trawl, June 1971. R.N. PF.263.

Description. NIS.70.1 is globose, 35 x 45 x 30 mm, light grey (in spirit), firm, harsh to the touch. PF.263 is massive, yellowish, hard (in the dry state), measuring 60 x 50 x 30 mm.

Spicules. 1) Oxeas rare, measuring about 1200-1600 x 11-13.5 μm. 2) Calthrops very abundant also in the choanosome, in the form of triods, mostly without trace of a fourth actine; actines straight and conical, about 650 x 37 μm. Some calthrops are further reduced to diactines. 3) Microxeas very abundant, measuring 65-140 x 1.5-5.5 μm. Rarely centrotylote in specimen NIS.70.1, they are for the most part centrotylote in PF.263, often quite markedly. 4) Metasters are rare in PF.263, fairly abundant in the other specimen, measuring 10-40 μm in diameter.

Remarks. TOPSENT (1902: 15) would transfer this species to *Nethea*, a genus of uncertain value which, anyway, was based on the presence of dichotriaenes with reduced shaft. But a reduction of the rhabdome does not seem to be a character of generic value.

Poecillastra rudiastra sp. n.

Occurrence. Off Calvi, depth 135 m, detrital, trawl, 18 July 1975. R.N. NIS.12.4.

Holotype (a spicule slide). MSNG 47161.

Description. (Fig. 13) The specimen is a small fragment, shapeless, of firm consistency, whitish in spirit. It has been entirely used for spicule preparations.

Spicules. 1) Oxeas curved, measuring 720-1250 x 16-24 μm, very abundant. They are frequently transformed into styles or strongyles; centrotylotysm is present in a variable degree, from faint to conspicuous and irregular, sometimes multiple. 2) Calthrops irregular, not abundant, mostly in the form of triods and diods, rays 120-200 μm. 3) Anatriaenes, not abundant, rhabdome 8-12 μm thick, length unknown, cladome 60-80 μm. 4) Dichotriaenes? Only one observed, protoclads 120 μm, deuteroclads 200-300 μm. 5) Microxeas rough, straight or slightly curved, generally slightly centrotylote, 50-150 x 2-3 μm, very abundant. 6) Spirasters with thin, long rays, 13-20 μm in maximum diameter. Metasters measuring from 14 to 50 μm, very often strongly modified by reduction and thickening of their rays and with rough surface. All these asters are very abundant.

Remarks. In spite of the scarcity of the available material, it seems opportune to give this species a name, as it seems sufficiently characterized by the presence of anatriaenes – a feature which places it near *Poecillastra armata* Hanitsch (1895: 213) from Portugal – and

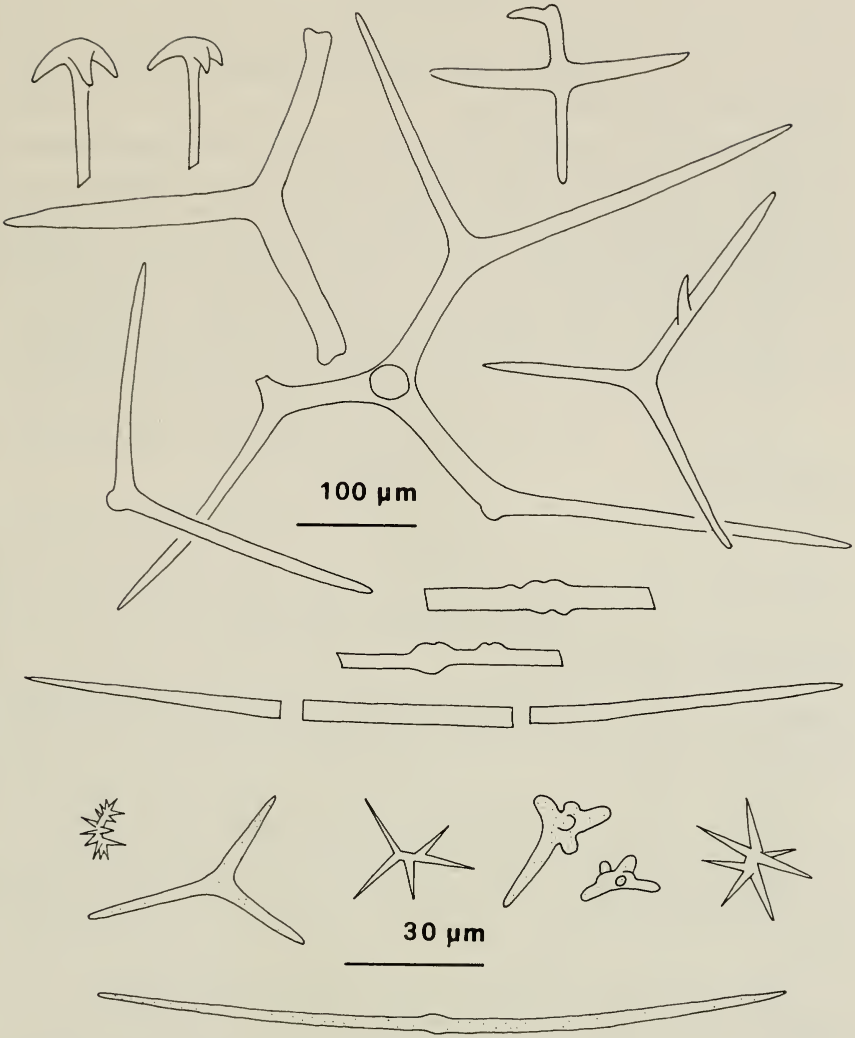

Fig. 13 - Spicules of *Poecillastra rudiastra* sp. n.

by the transformation to which many of its asters are subjected. Whether dichotriaenes are part of its spiculation is at the moment uncertain. It may be observed that, as the relative position of the calthrops could not be ascertained, this species might belong to *Characella*, if that genus is really distinct from *Poecillastra*.

THENEIDAE

Thenea muricata (Bowerbank)

Tethea muricata Bowerbank, 1858: 308

Occurrence. Off Calvi, depth 140 m, detrital, dredge, 30 July 1974. R.N. NIS.16.

Off Calvi, depth 128 m, detrital, dredge, 18 July 1975. R.N. NIS.4.11.

Off Calvi, depth 85-130 m, detrital, dredge, 31 July-5 August 1970. R.N. NIS.35, NIS.42.

Off Calvi, depth 121-149 m, detrital, dredge, 14-18 July 1969. R.N. NIS.68.12, NIS.68.14, NIS.81.3, NIS.83.39.

Off Calvi, depth 135 m, detrital, trawl, 29 November 1976. R.N. NIS.17.

Gulf of Taranto, off Porto Cesareo, depth 200 m, mud, dredge, 20 November 1969. R.N. PC.5.

Gulf of Genoa, south of Portofino, depth 600 m, trawl, July 1971. R.N. PF.338.

Gulf of Genoa, south of Portofino, depth 700 m, trawl, 31 July 1971. R.N. PF.348.

Remarks. Specimen PF.348 was found on the crab *Ergasticus clouei* Studer.

JASPIDAE

Jaspis johnstonii (Schmidt)

Vioa johnstonii Schmidt, 1862: 78

Occurrence. Tremiti Islands, S. Domino, Punta Provvidenza, depth 9-12 m, underwater cave, diver, July 1966. R.N. PTR.F.8, PTR.F.11a.

Tremiti Islands, S. Nicola, Grotta Testa di Morte, depth 10 m, rock, diver, 21 July 1968. R.N. PTR.G.11.

Leuca E., depth 1-2 m, superficial cave, diver, 9 July 1967. R.N. SAL.219.

Leuca W., depth 1-2 m, rocky shore, diver, 10 July 1967. R.N. SAL.173.

Gallipoli, depth 1-10 m, rock, diver, 17 September 1966. R.N. SAL.194.

Porto Tricase, depth 23 m, conglomerates, dredge, 18 October 1967. R.N. TRI.33.

Porto Tricase, depth 15-30 m, conglomerates, dredge, 22-24 September 1970. R.N. TRI.121, TRI.159.

Riva Trigoso, Punta Manara, depth 32 m, boulders, diver, 30 October 1970. R.N. PF.197.

Bogliasco, depth 7 m, rock, diver, 11 November 1970. R.N. PF.233.

Recco, depth 14-20 m, boulders, diver, August 1970. R.N. PF.290.

Torre a Mare, depth 12-15 m, conglomerates, diver, 25-27 September 1967.R.N. COR.3.

Torre a Mare, depth 18 m, conglomerates, diver, 10 October 1967. R.N. COR.35.

Bari, depth 21-30 m, conglomerates, diver, 21-30 October 1967. R.N. COR.51, COR.59.

Bari, depth 15 m, conglomerates, dredge, 17 June 1970. R.N. COR.87.

Ponza, depth 2-3 m, rocky shore, diver, 5 July 1969. R.N. PZ.26.

Remarks. (Fig. 14) I have observed in a previous paper (1972: 351) that the characters of this species are scarcely variable; a large number of specimens in this collection tend to confirm this view. *Jaspis johnstonii* appears as small, of firm consistency, mostly insinuating, sometimes encrusting; normally white, it may have a violet tinge. Its oxeas seem to be not separable in categories and have a wide range of size: from about 60 μm to about 600 or even 1000 μm; the larger ones being always much less abundant than the smaller ones. Centrotylotysm and a double bend (more often an asymmetrical one) may be observed only occasionally and do not seem to have diagnostic relevance. The oxyasters seem to have a constant character: they have for the most part seven to eleven smooth, conical rays, with sharp or blunt points, a diameter of 10 to 20 μm, only occasionally larger; as is the rule, the largest oxyasters have fewer rays.

There are, however, in the collection three specimens differing in some details, which seem to deserve to be separately described.

Jaspis sp. 1

Occurrence. Bogliasco, depth 15 m, conglomerates, diver, 11 November 1970. R.N. PF.249, PF.251.

Description. (Fig. 14) Both specimens were insinuating, firm, cream. They have been entirely used for spicule preparations.

Spicules. 1) Oxeas 350-450 x 6.7-10.7 μm, points stepped, very abundant. 2) Oxeas 80-190 x 1.5-3 μm, often faintly centrotylote, much less abundant. Intermediates with the larger ones are rare. 3) Oxyasters without centrum, with three to seven (mostly three to five) rays spined toward their distal end, 6-11 μm long.

Remarks. The peculiarities of this spiculation are: 1) The oxeas are separable in two size groups, with very rare intermediates. 2) The larger oxeas are very abundant, of comparatively small and uniform size, with stepped points. 3) The oxyasters have few, scarcely conical, spined rays.

Jaspis penetrans (Carter) (1880: 141) from the Gulf of Mannar and the specimen from the Red Sea described by Levi (1965: 8) as *J. johnstonii* have a similar spiculation.

Jaspis sp. 2

Occurrence. Off Calvi, depth 121-149 m, detrital, dredge, 14 July 1969. R.N. NIS.81.7.

Description. (Fig. 14) Only a small fragment was available, entirely used for spicule preparations.

Spicules. 1) Oxeas 1150-1600 x 10-14 μm, sometimes slightly centrotylote, not abundant. 2) Oxeas 100-320 x 2.5-5.5 μm, often with asymmetrical curvature, very abundant. 3) Oxyasters very abundant, variable, with small centrum, with five to ten rays smooth or spined, 12-31 μm in diameter.

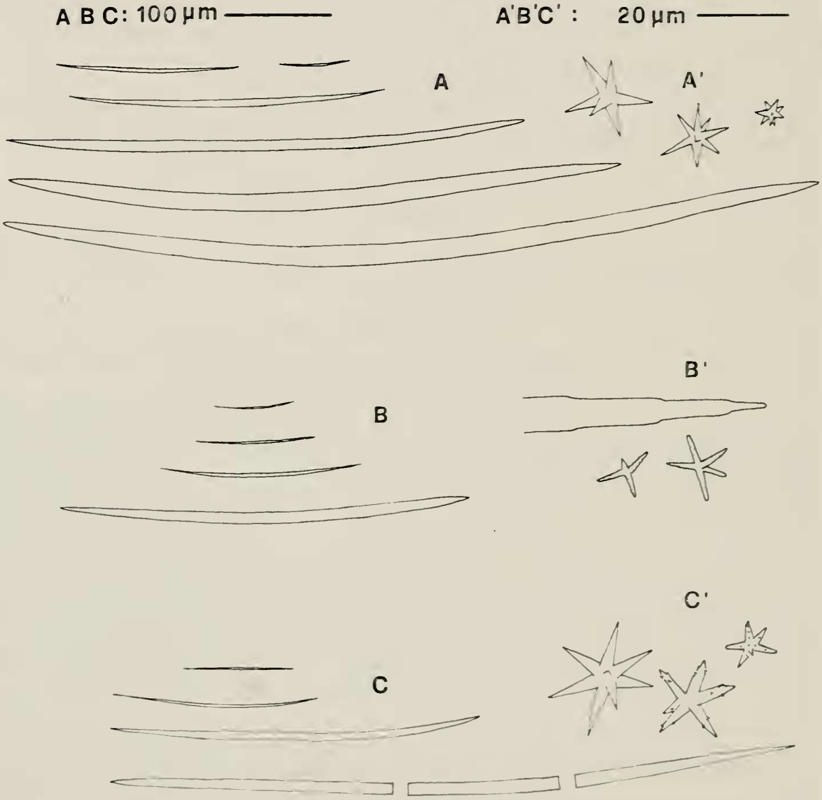

Fig. 14 - A: spicules of *Jaspis johnstonii*, B: spicules of *Jaspis* sp. 1, C: spicules of *Jaspis* sp. 2.

Remarks. The peculiarities of this spiculation are: 1) Oxeas separable in two size groups without intermediates, reaching a comparatively very large size. 2) Oxyasters very variable, smooth or spiny.

Holoxea furtiva Topsent

Holoxea furtiva Topsent, 1892b: XXVI

Occurrence. Torre a Mare, depth 15 m, conglomerates, diver, 30 September 1970. R.N. COR.184.

Description. The specimen was small, insinuating, fleshy, white.

Spicules. 1) Oxeas 800-1300 x 20-35 µm. 2) Oxeas 300-600 x 10-16 µm. 3) Sanidasters 10-18 µm. 4) Raphides 10-15 µm.

SPIROPHORIDA

TETILLIDAE

Craniella cranium (Müller)

Alcyonium cranium Müller, 1776: 255

Occurrence. Off Calvi, depth 121-149 m, detrital, dredge, 14 July 1969. R.N. NIS.81.8.
Off Calvi, depth 78 m, detrital, dredge, 2 August 1970. R.N. NIS.57.2.
Off Calvi, depth 135 m, detrital, trawl, 18 July 1975. R.N. NIS.19.6c.

Description. The three specimens measure respectively 3, 7 and 4 mm.

Spicules. 1) Oxeas 1000-1600 x 15-27 µm. 2) Oxeas 140-450 x 12-20 µm. 3) Protriaenes, rhabdome 6.5-10 µm thick, more than 2 mm long, clads 64-125 µm, cladome about 80 µm. 4) Anatriaenes, rhabdome about 6 µm thick, cladome 48 µm, clads 21-27 µm. 5) Sigmaspires 5-10 µm.

Cinachyra tarentina sp. n.

Occurrence. Porto Cesareo, depth 0.5-1 m, lagoon, sand and rock, 23 September 1971. R.N. PC.6 - PC.17, PC.55, PC.60, PC.63, PC.66.
Taranto, Mar Piccolo, depth 0.5-1 m, detrital, 20 September 1971. R.N. PC.118, PC.121, PC.124.

Holotype (PC.10). MSNG 47162.

Paratypes (PC.17, various specimens). MSNG 47163.

Description. (Figg. 15, 16) This sponge is very abundant in the lagoon south of Porto Cesareo. The shape is hemispherical, more or less flattened, with wide base of attachment, the size generally between 20 and 25 mm in diameter (the largest specimen observed measured

33 mm). The colour in life is light yellowish brown (about c.c.340). The consistency, in spite of the strong radiating bundles of oxeas, is weak. Dried specimens become contracted and hard; those preserved in formalin generally collapse. The surface is strongly hispid, encrusted by much minute sand. The calyces may be equatorially placed or scattered. They are often very wide and deep, with sphinctrate rim slightly elevated, in some (better preserved) specimens, fringed. No cortex is apparent.

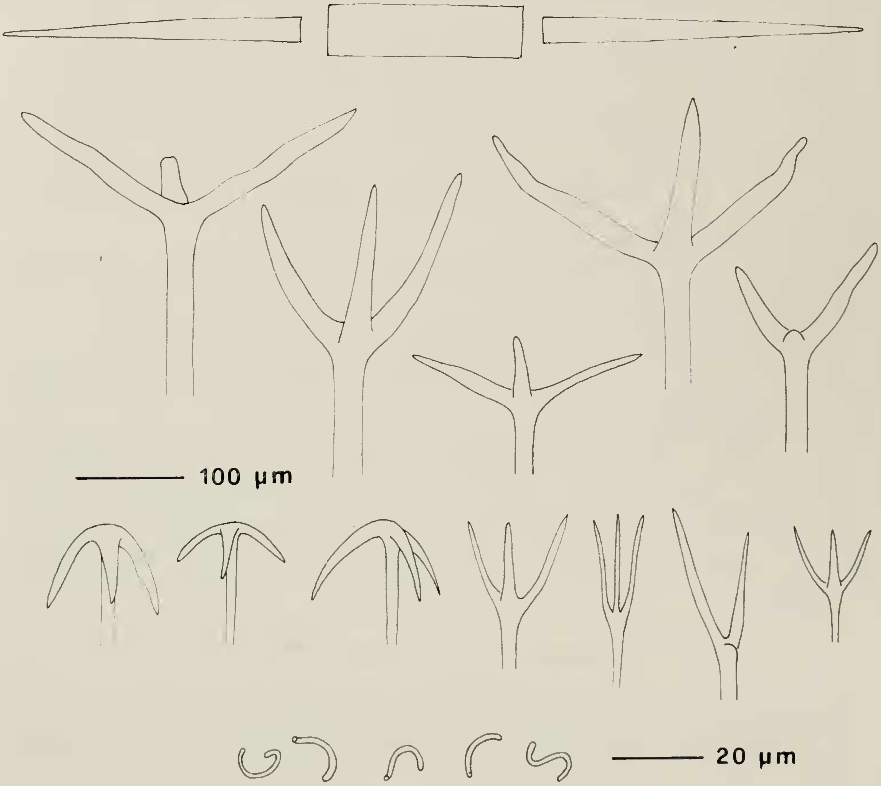

Fig. 15 - Spicules of *Cinachyra tarentina* sp. n.

Spicules. 1) Oxeas straight, 2000-3600 x 14-38 µm. 2) Plagiotriaenes with rhabdome fusiform and straight, 1200-2000 x 24-27 µm, cladome 350-380 µm, clads 220-250 µm. These spicules are not abundant, but they are present in many specimens. 3) Anatriaenes with rhabdome

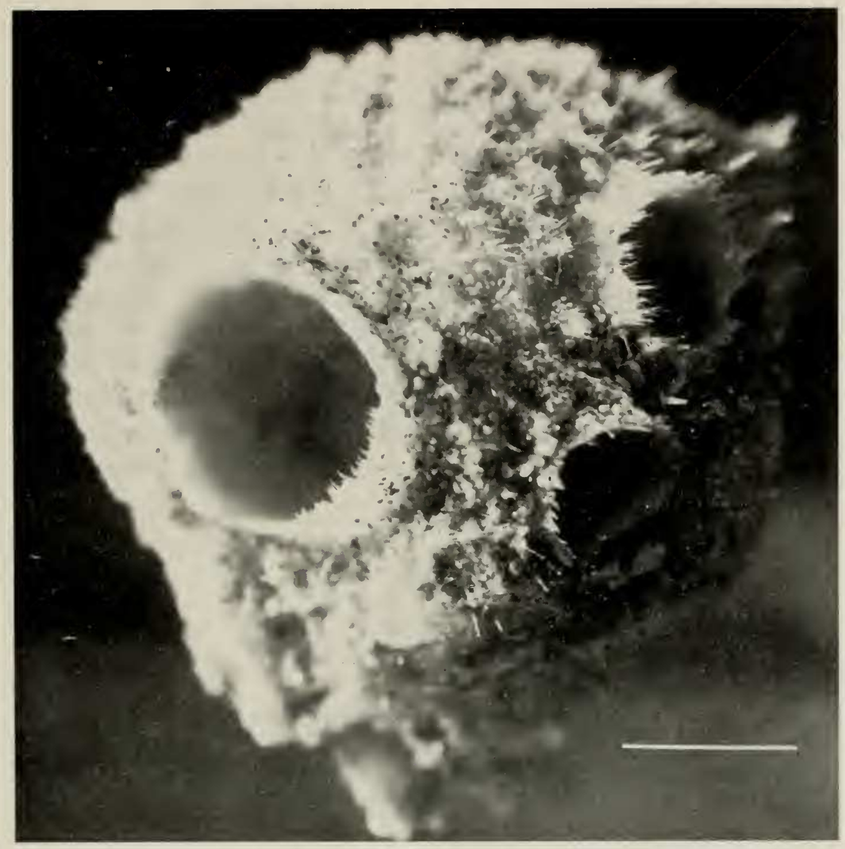

Fig. 16 - A specimen of *Cinachyra tarentina* sp. n. (in spirit). Scale: 0.5 cm.

5.5-8 μm thick below the clads, often flexuous, tapering to hair-like dimensions, up to 9 mm long, perhaps more, cladome 70-120 μm, clads 60-100 μm. 4) Protriaenes much scarcer than the anatriaenes, rhabdome about the same, cladome 45-100 μm, clads 60-120 μm, often with unequal clads or in the form of a diaene. 5) Sigmaspires, very abundant, chord 9-12 μm.

Remarks. The presence of *Cinachyra* in the Mediterranean has been firstly reported by BURTON (1936: 8) for specimens he identified as *Cinachyra australiensis* (later placed by him in synonymy with *Chrotella cavernosa*). As *Chrotella cavernosa* also specimens from the Mediterranean coast of Israel have been reported by TSURNAMAL (1969a:

150). The present species appears distinct, mainly owing to the absence of microxeas.

As to the presence in my samples of stout plagiotriaenes, such spicules have been found in *Tetilla cinachyroides* Hentschel, *Tethya hebes* Lendenfeld, *Tetilla poculifera* Dendy (but all three possess microxeas). These species have been regarded as belonging to *Chrotella cavernosa* by Burton (1934a: 523 and 1959: 200), but Burton's adoption of *Chrotella* in place of *Cinachyra* has not been generally accepted, and his extensive synonymizing is subject to much doubt. According to Wilson (1925: 355) these three species belong to *Tetilla,* the first one in his subgenus *Cinachyrella.* Probably Wilson's approach to the problem of distinguishing generically *Tetilla* and *Cinachyra* deserved more consideration than it received from later authors. If his proposals were followed, the present species would find its place in *Tetilla* (*Cinachyrella*).

Samidae

Samus anonyma Gray

Samus anonyma Gray, 1867: 526

Occurrence. Tremiti Islands, S. Nicola, Grotta Testa di Morte, depth 0.5 m, superficial cave, 21 July 1968. R.N. PTR.G.6.

Tremiti Islands, S. Domino, Grotta delle Viole, depth 2-4 m, superficial cave, diver, 23 July 1968, R.N. PTR.H.22.

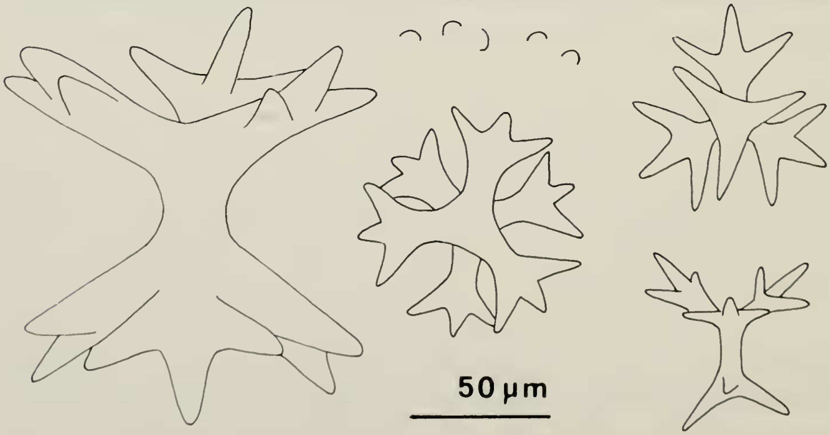

Fig. 17 - *Samus anonyma*. Spicules from specimen SAL.58.

Leuca E., depth 4 m, superficial cave, diver, 9 July 1967. R.N. SAL.58.
Leuca W., depth 1-2 m, superficial cave, diver, 10 July 1967. R.N. SAL.117.

Description. (Fig. 17) PTR.H.22: small, boring or burrowing. SAL.58: a small bluish encrustation on rock. SAL.117: a few typical amphitriaenes in a spicule preparation of *Alectona millari*. PTR.G.6: a few typical amphitriaenes in a spicule preparation of *Cliona schmidti*.

Spicules. 1) Amphitriaenes, total length up to 150 μm, cladome up to 130 μm. 2) Sigmaspires 10-12 μm.

Remarks. In specimens PTR.H.22 and SAL.58 the typical spicules of the species are mixed with heterogeneous spicules among which, in both cases, small regular oxeas prevail, measuring respectively 107 x 5.4 μm and 114 x 4 μm.

LITHISTIDA (1)

DESMANTHIDAE

Desmanthus incrustans (Topsent)

Aciculites incrustans Topsent, 1889: 32

Occurrence. Leuca E., depth 2-3 m, superficial cave, diver, 9 July 1967. R.N. SAL.174.
Portofino, Aurora, depth 13 m, rock, diver, November 1976. R.N. PF.459.

Description. (Fig. 18) Both specimens are small encrustations, SAL.174 noted as red in life.

Remarks. The spiculation of PF.459 is in close agreement with TOPSENT's figure (1894b: Pl. 11, Fig. 1) and with the specimens I recorded from Naples (1972: 335). In SAL.174 the desmas have clads measuring 80-130 μm, with very scarce tubercles, the styles are for the most part straight and with a faint basal swelling, and measure 300-560 x 8-26 μm. These spicules agree better with those recorded by VACELET et al. (1976: 29) for a specimen from Madagascar.

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(1) Systematic position uncertain.

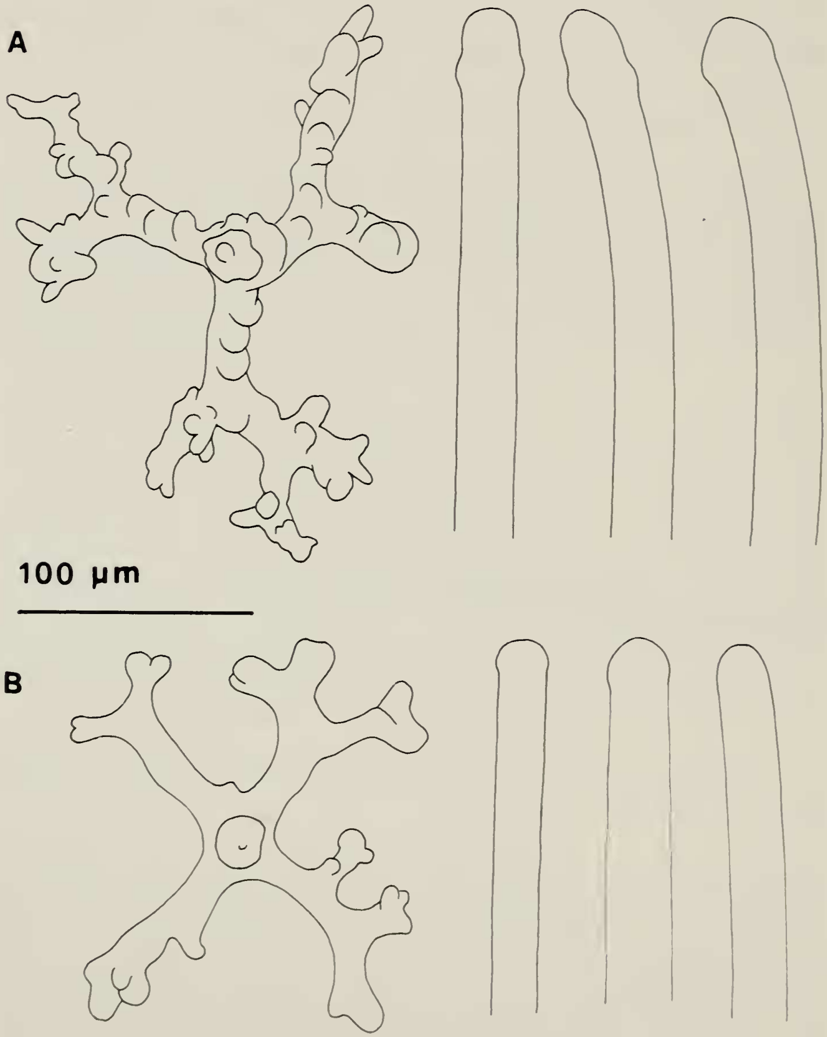

Fig. 18 - Spicules of *Desmanthus incrustans*. A: PF.459, B: SAL.174.

HADROMERIDA

SUBERITIDAE

Suberites carnosus (Johnston)

Halichondria carnosa Johnston, 1842: 146

Occurrence. Off Camogli, depth 50-70 m, mud, trawl, July 1961. R.N. PF.28, PF.30.

Description. Both specimens are globose, pedunculate, on living *Aporrhais pespelicani* (L.).

Spicules. Tylostyles almost straight, with basal vesicle, 300-650 x 4-7 μm.

Suberites syringella (Schmidt)

Raspailia syringella Schmidt, 1868: 10

Occurrence. Off Calvi, depth 128 m, detrital, trawl, 17-18 July 1975. R.N. NIS.4.3, NIS.11, NIS.12.2, NIS.19.1, NIS.25.1.

Off Calvi, depth 117-147 m, detrital, dredge, 15 July 1969. NIS.82.7, NIS.83.23, NIS.83.27.

Description. All the specimens are small, fragmented, consisting of elongated and contorted irregular cylinders up to about 3 mm in diameter. One specimen, attached to an old shell, is also thinly encrusting the substratum.

Spicules. Tylostyles constant as to shape and size range. Measuring 180-460 x 4-8 μm, they are slightly fusiform and curved near the head, which has about the same diameter as the shaft at the middle and shows an evident vesicle.

Suberites domuncula (Olivi)

Alcyonium domuncula Olivi, 1792: 241

Occurrence. Off Camogli, depth 50-70 m, mud, trawl, July 1961. R.N. PF.26, PF.31.

South of Cap Ferrat, depth 106 m, dredge, 19 April 1971. R.N. NIS.34.

Description. PF.26: thickly enveloping a shell with hermit crab. Tylostyles straight or slightly curved, rarely modified to styles, never to oxeas, 230-340 x 2.7-5.4 μm. Microstrongyles centrotylote 18-30 x 1 μm, fairly abundant.

PF.31: partially enveloping the shell of a living *Fusus rostratus* (Olivi). Tylostyles straight or slightly curved, rarely modified to styles, never to oxeas, 210-300 x 2.7-6.7 μm. Microstrongyles centrotylote 18-30 x 1 μm, not abundant.

NIS.34: enveloping the shell of a hermit crab. Tylostyles straight or curved, often modified to styles, not to oxeas, 240-320 x 2.7-6.7 μm. Microstrongyles centrotylote 14-35 x 1 μm, abundant.

Remarks. These specimens confirm the impracticability of distinguishing between *Suberites domuncula* and *S. ficus* (cf. PULITZER-FINALI, 1978: 22).

Laxosuberites rugosus (Schmidt)

Suberites rugosus Schmidt, 1868: 15

Occurrence. Gargano, Baia di Campi, depth 2-10 m, rocks and mud, diver, 4 October 1967. R.N. GAR.5, GAR.30, GAR.32.

Description. GAR.5: irregularly cushion-shaped, fleshy, hispid, orange; GAR.30: orange-yellow; GAR.32: orange.

Spicules. Tylostyles (subtylostyles, styles) measuring 200-1440 x 9-20 μm.

Pseudosuberites hyalinus (Ridley & Dendy)

Hymeniacidon (?) *hyalina* Ridley & Dendy, 1887: 168

Occurrence. Bari, depth 30 m, conglomerates, dredge, 17 June 1970. R.N. COR.114.

Description. The specimen consists of a small fragment, yellow, of firm consistency.

Spicules. Tylostyles measuring from 130 x 3 μm to 810 x 17 μm, strongly fusiform: typically, a tylostyle with a maximum diameter of 12 μm has a tyle of only 6.7 μm in diameter.

Remarks. The present identification is based only on the shape of the tylostyles and is therefore advanced with some hesitation. These spicules are shorter and thinner than indicated by TOPSENT (1900: 171), longer and thinner than recorded by VACELET (1969: 175).

Pseudosuberites sulphureus (Bowerbank)

Hymeniacidon sulphurea Bowerbank, 1866: 208

Occurrence. Torre a Mare, depth 30 m, conglomerates, diver, 22 June 1970. R.N. COR.155, COR.156, COR.159, COR.162.

Portofino, Vessinaro, depth 50-70 m, detrital, trammel, 18 September 1965. R.N. PF.64, PF.70.

Riva Trigoso, Punta Manara, depth 32-33 m, boulders, diver, 30 October 1970. R.N. PF.189, PF.194.

Recco, depth 14-20 m, conglomerates, diver, August 1970. R.N. PF.300, PF.304.

Description. All the specimens were small (most of them entirely used for preparations), encrusting, laminar, easily detachable from the substratum, bright yellow.

Spicules. Tylostyles measuring 150-480 x 2.7-7 µm.

Prosuberites epiphytum (Lamark)

Alcyonium epiphytum Lamark, 1815: 163

Occurrence. Porto Tricase, depth 60 m, detrital, trammel, 24 September 1970. R.N. TRI.217, TRI.257, TRI.243, TRI.285.

Porto Tricase, depth 30 m, conglomerates, dredge, 24 September 1970. R.N. TRI.274.

Taranto, Mar Piccolo, depth 0.5 m, detrital, 18 July 1973. R.N. PC.125.

Gargano, Baia di Campi, depth 2-10 m, rocks and mud, diver, 15 September 1971. R.N. GAR.74.

Gargano, Baia di Campi, depth 2-10 m, rocks and mud, diver, 4 October 1967. R.N. GAR.10.

Description. TRI.217, TRI.257, TRI.243, TRI.285; encrusting on stones, light yellow; TRI.274: encrusting on gastropod; PC.125: encrusting on stone; GAR.74: encrusting on *Arca noae*, dull red (C.C.154); GAR.10: encrusting on *Spongia virgultosa*, egg-yellow.

Spicules. Tylostyles measuring 150-430 x 4-7 µm.

Prosuberites longispina Topsent

Prosuberites longispina Topsent, 1893: XLII

Occurrence. Porto Ercole, Grotta Azzurra, depth 6-12 m, superficial cave, diver, 5 September 1963. R.N. 578, 580b.

Porto Tricase, depth 60 m, conglomerates, trammel, 24 September 1970. R.N. TRI.220, TRI.227, TRI.228.

Description. Encrusting on pebbles, conspicuously hispid. TRI.220: yellow, TRI.227 and 228: orange.

Spicules. Tylostyles 220-2850 x 6.5-25.5 µm.

Rhizaxinella pyrifera (Delle Chiaje)

Tethya pyrifera Delle Chiaje, 1828: 151

Occurrence. Off Calvi, depth 137 m, detrital, dredge, 17 July 1975. R.N. NIS.27.

Off Calvi, depth 145 m, detrital, trawl, 15 February 1977. R.N. NIS.18.

Description. NIS.27: body 40 x 14 mm, stalk 65 x 3-4 mm. Coalescing with it a second individual with a body 40 x 14 mm and a shorter stalk that, as shown by its rounded end, was not reaching the substratum.

NIS.18: body 45 x 23 mm, stalk broken. Coalescing with it a second individual, body 30 x 17 mm, stalk broken.

Spicules. 1) Subtylostyles to styles, 350-1500 x 6-26 µm. 2) Subtylostyles to styles, flexuous, axial, up to 2100 µm long and 10 µm thick. 3) Raphides about 100 µm long, very thin.

Rhizaxinella gracilis (Lendenfeld)

Suberites gracilis Lendenfeld, 1896: 130

Occurrence. Off Calvi, depth 90-102 m, detrital, dredge, 5 August 1970. R.N. NIS.59.

Description. The stalk measures 17 x 1 mm, the inflated body 7 x 4 mm.

Spicules. The tylostyles (obtained from the body) are slender, 300-600 x 4-7 µm. Their head shows a quite apparent vesicle.

Rhizaxinella elongata (Ridley & Dendy)

Suberites elongata Ridley & Dendy, 1886: 486.

Occurrence. Off Calvi, depth 128 m, detrital, dredge, 18 July 1975. R.N. NIS.4.

Off Calvi, depth 137 m, detrital, dredge, 29 July 1974. R.N. NIS.24.

Off Calvi, depth 123-125 m, detrital, dredge, 18 July 1969. R.N. NIS.68.8.

Description. Stalk 13 to 30 mm long, about 0.8 mm thick; inflated body 5 x 4 mm to 9 x 5 mm.

Spicules. 1) Styles 210-1800 x 5-16 µm. 2) Tylostyles 180-490 x 5-10 µm.

Terpios fugax Duchassaing & Michelotti

Terpios fugax Duchassaing & Michelotti, 1864: 102

Occurrence. Castro Marina, Zinzulusa Bay, depth 2-3 m, rocky shore, diver, 8 July 1967. R.N. ZZ.12.

Tremiti Islands, S. Domino, Grotta delle Viole, depth 1-6 m, superficial cave, diver, 26 July 1968. R.N. PTR.H.54.

Description. ZZ.12: abundant, extremely thin, blue. PTR.H.54: blue.

Spicules. Tylostyles respectively up to 510 x 6.7 μm and up to 470 x 5.5 μm.

POLYMASTIIDAE

Weberella verrucosa Vacelet

Weberella verrucosa Vacelet, 1960: 261

Occurrence. Banc du Magaud, depth 140-160 m, detrital, dredge, 19 May 1970. R.N. NIS.84.14, NIS.84.8.

Off Calvi, depth 100 m, detrital, dredge, 4 August 1970. R.N. NIS.56.9.

Off Calvi, depth 123-125 m, detrital, dredge, 18 July 1969. R.N. NIS.68.16.

Description. NIS.84.14: Two specimens with upper part cut off, irregularly elongated, presumed height 15 mm, width about 8 mm, base of attachment about 6 mm. No apparent papillae.

NIS.84.8a: Globose, 13 mm high, 11 mm wide, base about 7 mm wide. A single papilla on top, about 2 mm long.

NIS.84.8b: Irregularly rounded, 4 mm high, maximum width 5 mm, base about 3 mm wide. A single papilla on top, 1.5 mm long.

NIS.84.8c: Regularly globose with flattened base, 3.5 mm high, 4.5 mm wide, base 4 mm. A single papilla on top, 1 mm long.

NIS.84.8d: Torn from base, ovoid, 7.5 mm high, 6 mm wide, base about 3 mm. Three papillae near the top, 4, 3 and 2 mm long.

NIS.84.8e: Without apparent base of attachment, regularly ovoid, 7 mm high, 3.5 mm wide. A single papilla 1.5 mm long.

NIS.68.16: Without apparent base of attachment, spherical, 3 mm in diameter. A single papilla 1 mm long.

NIS.65.9: Without apparent base of attachment, regularly ovoid, 5 mm long, 3 mm wide. No apparent papillae.

These specimens have generally a restricted base, but are not pedunculated. The surface appears smooth, with the exception of specimen NIS.68.16, which is minutely hispid. It is possible that a delicate hispidation may have been rubbed off in the course of dredging. The consistency is firm, or tough. The cortex is about 300 μm thick. The skeletal frame is a confused reticulation of irregular spicular tracts.

Spicules. 1) Tylostyles choanosomal, measuring 250-600 x 4-8 μm (they may reach 700 μm). They are mostly straight, sometimes slightly curved, not fusiform, with variable but always well-formed head; polytylote bases are frequent. 2) Tylostyles ectosomal measuring 95-170 x 1-2 μm.

Remarks. It seems doubtful whether this species may be distinguished from *W. bursa* (Vosmaer, 1885: 16). The only difference appears to consist in the shape of the choanosomal spicules, which Vosmaer described as fusiform subtylostyles. Styles to subtylostyles

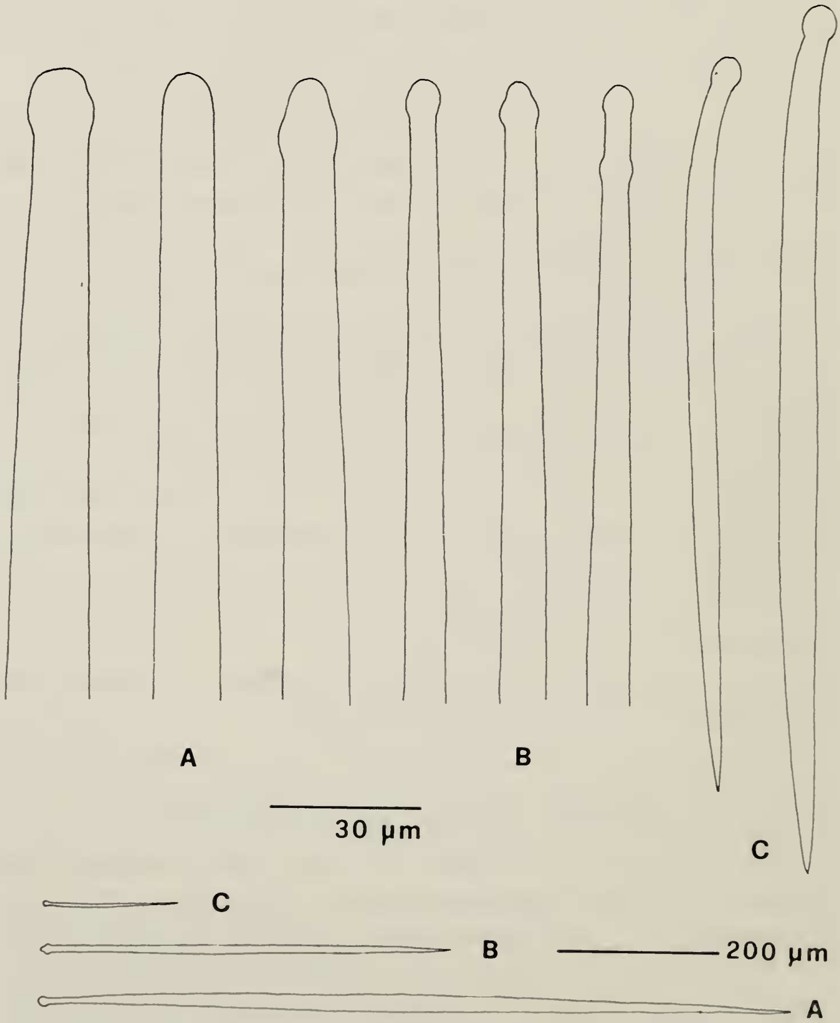

Fig. 19 - Spicules of *Polymastia sola* sp. n.

have been reported for this species by Topsent (1928: 149) and by Koltun (1966: 76), but in both cases these spicules were not fusiform.

Polymastia sola sp. n.

Occurrence. Off Calvi, depth 123-147 m, detrital, dredge, 15 July 1969 R.N. NIS.83.3.

Holotype. MSNG 47164.

Description. (Figg. 19, 20) The specimen consists of a small cushion-shaped mass about 10 mm wide, bearing a single papilla, flattened, closed, 6 mm long. There is a distinct cortex, about 200 μm thick. The surface is microscopically, very densely hispidated.

Spicules. 1) Subtylostyles with tyle reduced or even absent, straight, fusiform, measuring 800-1000 x 12-18 μm. 2) Subtylostyles straight or gently curved, fusiform, size 400-560 x 8-11 μm. 3) Tylostyles curved near the base, with well-formed head, fusiform, size 150-230 x 5-8 μm.

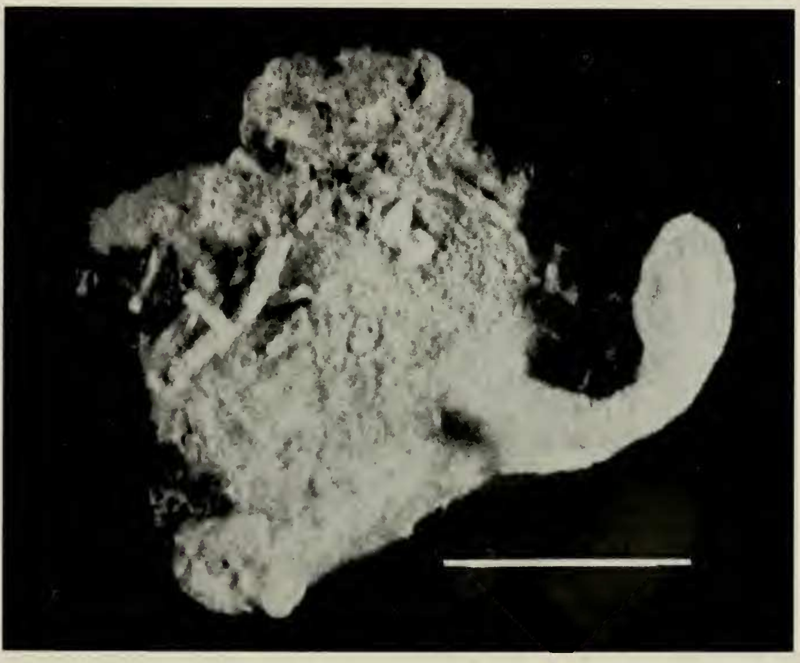

Fig. 20 - *Polymastia sola* sp. n., the holotype (dry). Scale: 0.5 cm.

Remarks. This species is mainly characterized by the size and shape of the smaller tylostyles.

Polymastia polytylota Vacelet

Polymastia polytylota Vacelet, 1969: 172

Occurrence. Off Calvi, depth 117 m, detrital, dredge, 15 July 1969. R.N. NIS.82.1.

Description. (Fig. 21) A digitation from a cushion-shaped base. Consistency firm, total height 9 mm.

Spicules. 1) Tylostyles to subtylostyles fusiform, straight, showing, as a rule, one or two, rarely more, successive swellings at a certain distance from the base. Size 650-810 x 10-12.5 µm. 2) Tylostyles fusi-

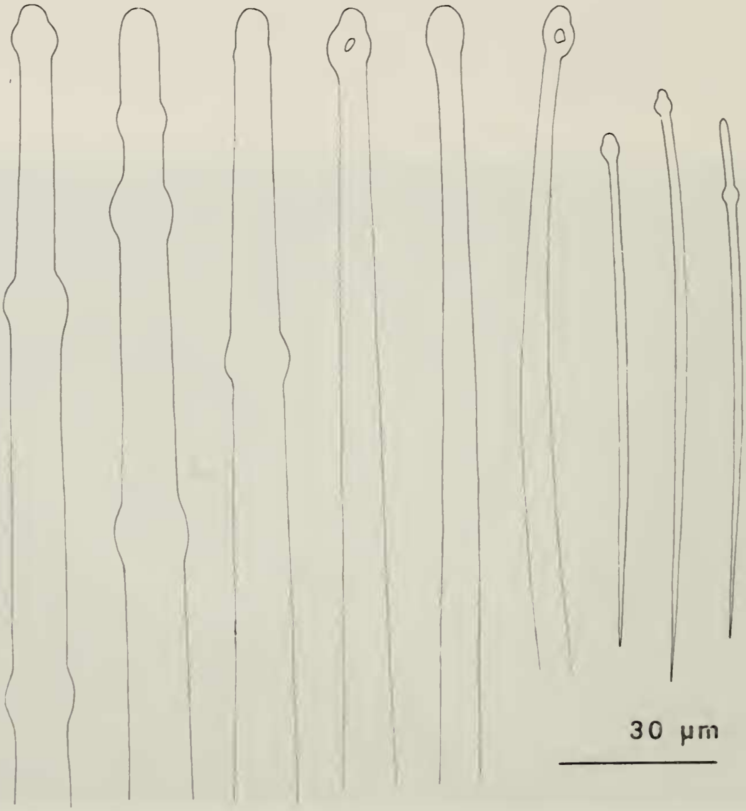

Fig. 21 - *Polymastia polytylota*, Spicules of specimen NIS.82.1.

form, straight or slightly curved, mostly showing a vesicle in the tyle, size 210-490 x 7-10 μm. 3) Tylostyles gently curved, size 80-120 x 1.5-2.5 μm.

Polymastia sp. A

Occurrence. Banc du Magaud, depth 140-160 m, detrital, dredge, 19 May 1970. R.N. NIS.84.10.

Description. (Figg. 22, 23) The specimen, entirely used for a spicule preparation, was a roundish to encrusting mass on a pebble, about 7 mm in diameter, bearing a cylindrical process about 5 mm long and 1 mm thick.

Spicules. 1) Subtylostyles to strongyloxeas straight, fusiform, size 600-800 x 10-13.5 μm. 2) Tylostyles fusiform, generally with well-formed tyle, but sometimes modified toward strongyloxeas, straight or gently curved at the first third of their length, size 220-400 x 7-12 μm. 3) Styles to subtylostyles to tylostyles gently curved, size 90-150 x 1.5-3 μm.

Remarks. The main difference of this spiculation from that of *Polymastia polytylota* Vacelet consists in the absence of polytylotysm.

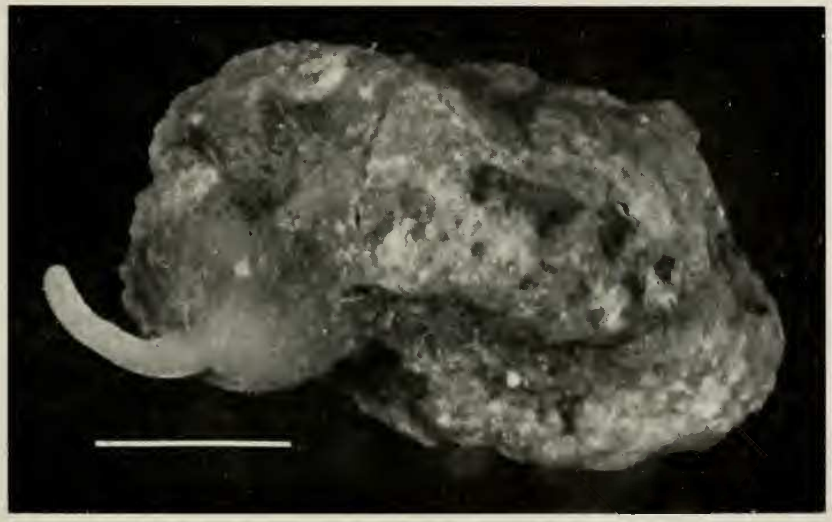

Fig. 22 - *Polymastia* sp. A. Specimen NIS.84.10 (in spirit). Scale: 0.5 cm.

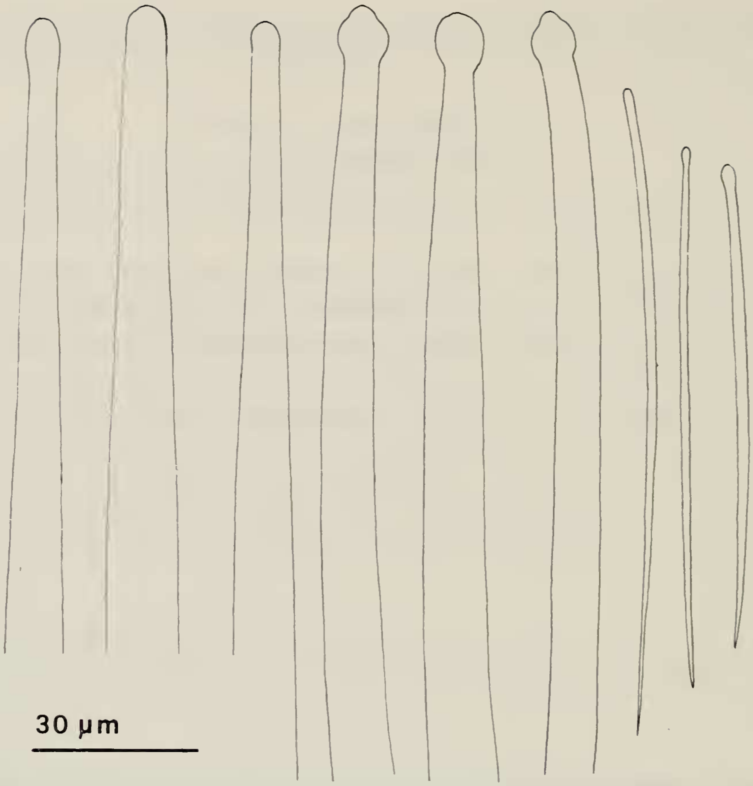

Fig. 23 - Spicules of *Polymastia* sp. A.

Polymastia sp. B

Occurrence. Off Calvi, depth 117-147 m, detrital, dredge, 15 July 1969. R.N. NIS.82.29, NIS.83.49.

Description. (Fig. 24) Specimen 82.29 is globular, 4 mm in diameter, bearing a single process 4 x 1 mm. Specimen NIS.83.49 is represented by a conical process starting from an encrusting base, size about 4 mm. Both have been entirely used for preparations.

Spicules. 1) Subtylostyles fusiform, straight, tyle variable but generally scarcely developed, often absent, size 700-900 x 12-18 µm. 2) Tylostyles to subtylostyles gently curved, tyle variable from well-formed to almost absent, size 330-540 x 5-8.5 µm. 3) Tylostyles with well-formed tyle, gently curved, rarely straight, size 110-210 x 3-4 µm.

Remarks. Small specimens of *Polymastia* bearing a single papilla appear rather frequent at depths of 117-160 m. Specific separations, on the basis of not relevant differences in the shape of the tylostyles, can be made, at present, only tentatively.

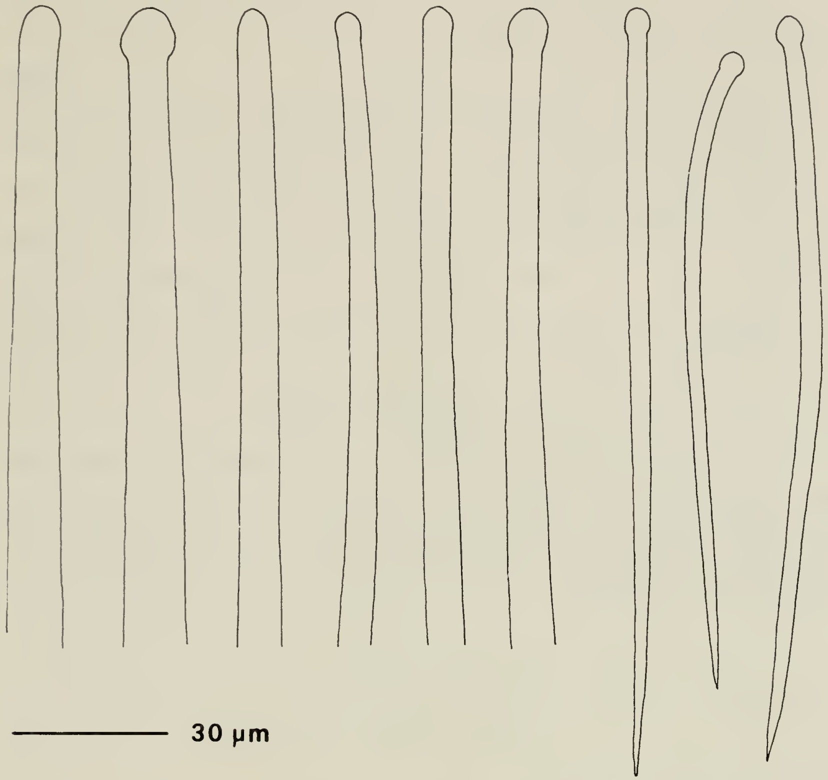

Fig. 24 - Spicules of *Polymastia* sp. B.

SPIRASTRELLIDAE

Spirastrella cunctatrix Schmidt

Spirastrella cunctatrix Schmidt, 1868: 17

Occurrence. Ponza, depth 0-3 m, superficial cave, diver, 5 July 1969. R.N. PZ.22, PZ.36, PZ.40.

Portofino, S. Fruttuoso, depth 10 m, overhang, diver, 9 September 1964. R.N. PF.88.

Portofino, S. Fruttuoso, 10 m, rock, diver, 14 October 1963. R.N. PF.134.

Recco, depth 14-20 m, rocks, diver, August 1970. R.N. PF.280.

Portofino, Punta Chiappa, depth 40 m, rocks, diver, 12 October 1962. R.N. PF.380.

Panarea, depth 1-4 m, rocky shore, diver, 15 August 1971. R.N. PAN.44, PAN.47, PAN.49.

Crete, Agio Nicolaos, depth 0.5 m, superficial cavity, 22 September 1969. R.N. CRT.22, CRT.32.

Zinzulusa Bay, depth 1-3 m, rocky shore, diver, 8 July 1967. R.N. ZZ.6, ZZ.41.

Zinzulusa Bay, depth 0-0.1 m, rocky shore, 13 September 1965. R.N. ZZ.52.

Leuca W., depth 1.5 m, rocky shore, 8-10 July 1967. R.N. SAL.20, SAL.39, SAL.185.

Leuca E., depth 0.5-2 m, superficial cave, diver, 9 July 1967. R.N. SAL.149.

Gallipoli, depth 1-10 m, rocky shore, diver, 17 September 1966. R.N. SAL.199.

Dubrovnik, depth 30 m, detrital, dredge, 16 July 1967. R.N. DUB.17.

Gargano, Baia di Campi, depth 2-5 m, rocks and mud, diver, 4-5 October 1967. R.N. GAR.15.

Torre a Mare, depth 12-18 m, conglomerates, diver, 25-27 September 1967. R.N. COR.1, COR.7, COR.25.

Bari, depth 15 m, conglomerates, dredge, 17-23 June 1970. R.N. COR.81,COR.84, COR.176.

Torre a Mare, depth 15-30 m, conglomerates, diver, 22 June 1970. R.N. COR.134, COR.138.

Gargano, Baia di Campi, depth 2-5 m, rocks and mud, diver, 15-21 September 1971. R.N. GAR.58, GAR.69.

Porto Tricase, depth 23-25 m, conglomerates, dredge, October-November 1967. R.N. TRI.28, TRI.36.

Porto Tricase, depth 15 m, conglomerates, diver, 22 September 1970. R.N. TRI. 86, TRI.107, TRI.158, TRI.173, TRI.185.

Tremiti Islands, S. Domino, Punta Diamante, depth 0-4 m, superficial cave, diver, 5 July 1966. R.N. PTR.C.6.

Tremiti Islands, S. Domino, Cala Tonda, depth 1-3 m, superficial cave, diver, July 1966. R.N. PTR.D.1, PTR.D.12, PTR.D.17.

Tremiti Islands, Caprara, Cala Sorrentino, depth 2-3 m, superficial cave, diver, July 1966. R.N. PTR.E.14.

CLIONIDAE

Cliona celata Grant

Cliona celata Grant, 1826a: 79

Occurrence. Portofino, Altare, depth 85 m, mud and rocks, trammel, 22 May 1965. R.N. PF.32.

Dubrovnik, depth 30 m, detrital, dredge, 16 July 1967. R.N. DUB.1.

Taranto, Mar Piccolo, depth 0.6 m, detrital, 20 September 1971. R.N. PC.110.

Porto Cesareo, depth 0.5-1 m, lagoon, sand and rocks, 24 September 1971. R.N. PC.76.

Between Cap Ferrat and Cap d'Ail, depth 50 m, detrital, dredge, 20 October 1971. R.N. NIS.30, NIS.45, NIS.45.1, NIS.53.

Cliona viridis (Schmidt)

Vioa viridis Schmidt, 1862: 77

Occurrence. Torre a Mare, depth 12-15 m, conglomerates, diver, 25-27 September 1967. R.N. COR.17.

Barletta, depth 15-16 m, conglomerates, diver, 24 October 1967. R.N. COR.55.

Bari, depth 15 m, conglomerates, dredge, 17 June 1970. R.N. COR.85,COR.86, COR.102.

Porto Cesareo, depth 0.5-1 m, lagoon, sand and rocks, 24 September 1971. R.N. PC.77.

Gargano, Baia di Campi, depth 2-3 m, rocks and mud, diver, 15-21 September 1971. R.N. GAR.55.

Tremiti Islands, S. Domino, Grotta delle Viole, depth 4-7 m, superficial cave, diver, 26 July 1968. R.N. PTR.H.45.

Rovinij, depth 35 m, detritus and ooze, dredge, 23 June 1969. R.N. LI.29.

Crete, Gournia, depth 2 m, rocky shore, diver, 20 September 1969. R.N. CRT.7, CRT.2.

Tremiti Islands, S. Domino, Cala Tonda, depth 1-5 m, superficial cave, diver, July 1966. R.N. PTR.D.3, PTR.D.19.

Recco, depth 14-20 m, conglomerates, diver, August 1970. R.N. PF.286.

Portofino, Altare, depth 45 m, rocks, trammel, 30 March 1965. R.N. PF.9.

S. Caterina, shallow water, rocky shore, 7 July 1967. R.N. SAL.10.

Leuca W., shallow water, rocky shore, diver, 8-10 July 1967. R.N. SAL.37, SAL.192.

Porto Ercole, Grotta Azzurra, depth 6-12 m, superficial cave, diver, 5 September 1963. R.N. 513, 539, 581.

Crete, Agio Nicolaos, depth 0.5 m, cavity among boulders, 22 September 1969. R.N. CRT.21.

Cliona schmidti (Ridley)

Vioa schmidti Ridley, 1881: 130

Occurrence. Tremiti Islands, Cala Diamante, depth 2 m, superficial cave, diver, 5 July 1966. R.N. PTR.C.13.

Castro Marina, depth 1-4 m, rocky shore, diver, 8 July 1967. R.N. ZZ.26.

Torre a Mare, depth 18 m, conglomerates, diver, 10 October 1967. R.N. COR.39.

Porto Tricase, depth 1 m, superficial cavity, 18 October 1967. R.N. TRI.3.

Porto Badisco, depth 1-3 m, rocky shore, diver, 9 July 1967. R.N. SAL.27.

Leuca E., depth 0.5 m, superficial cavity, 9 July 1967. R.N. SAL.31.

Leuca E., shallow water, rocky shore, 9 July 1968. R.N. SAL.166.

S. Caterina, depth 2 m, rocky shore, diver, 7 July 1967. R.N. SAL.1.

Tremiti Islands, S. Nicola, Grotta Testa di Morte, depth 0.5 m, superficial cave, 21 July 1968. R.N. PTR.G.6.

Cliona vastifica Hancock

Cliona vastifica Hancock, 1849: 342

Occurrence. Gargano, Baia di Campi, depth 2-10 m, rocks and mud, diver, 4-5 October 1967. R.N. GAR.47.

Leuca E., depth 1-2 m, superficial cave, diver, 9 July 1967. R.N. SAL.186.

Cliona labyrinthica Hancock

Cliona labyrinthica Hancock, 1849: 340

Occurrence. Portofino, Altare, depth 50 m, rocks and mud, trammel, 10 June 1965. R.N. PF.38.

Cliona vermifera Hancock

Cliona vermifera Hancock, 1867: 239.

Occurrence. Leuca W., depth 1 m, rocky shore, 8 July 1967. R.N. SAL.70.

Cliona rhodensis Rützler & Bromley

Cliona rhodensis Rützler & Bromley, 1981: 1219

Occurrence. Castro Marina, Zinzulusa Bay, depth 0-0.5 m, rocky shore, 13 September 1965. R.N. ZZ.58.

Gargano, Baia di Campi, depth 2 m, superficial cavity, diver, 4-5 October 1967. R.N. GAR.2, GAR.25.

Leuca, harbour, depth 2 m, breakwater, diver, 5 July 1967. R.N. SAL.190.

Leuca E., depth 0.5 m, superficial cavity, 9 July 1967. R.N. SAL:30.

Porto Badisco, depth 0.5 m, rocky shore, 9 July 1967. R.N. SAL.25.

Leuca W., depth 1 m, rocky shore, 8 July 1967. R.N. SAL.51, SAL.55.

Leuca W., depth 0.5 m, superficial cave, 22 September 1970. R.N. SAL.235, SAL.236.

Description. (Fig. 25) All the specimens were red in life, buff after preservation. As observed in specimen SAL.190, the papillae, protruding from the surface of the substratum, measure 1 to 2.5 mm in diameter and are 2 to 6 mm apart. The chambers are irregular, 5 to 10 mm in maximum width, separated by walls about 1 mm thick. On the breakwater of the harbour of S. Maria di Leuca this species was so abundant as to have considerable destructive power.

Spicules. 1) Tylostyles fusiform, straight or slightly curved (mostly at one third of their length); their tyles show the usual variability, but a globular shape tends to prevail. Such a shape is, however, rare in specimen SAL.190, where most tylostyles are less uniform, thinner, with more elongated and irregular or reduced tyles. Sizes in μm:

GAR.2: 270-405 x 4-13.4, tyle 6-17.4
GAR.25: 270-390 x 3-14.7, tyle 6.7-17.5
SAL.190: 270-380 x 5.3-10.7, tyle 6.7-12.1
SAL.30: 270-405 x 4-16, tyle 6.5-18.7
SAL.25: 270-430 x 5.4-14.7, tyle 7-17.4
SAL.51: 240-380 x 4-9.5, tyle 5-13.4
SAL.55: 240-360 x 6.7-13.5, tyle 7-17.5
ZZ.58: 300-480 x 7-14, tyle 10-17
SAL.235: 210-440 x 7-12, tyle 11-17
SAL.236: 230-360 x 5.5-11, tyle 9-14

The largest sizes indicated are the more common, the smallest ones refer possibly to young stages, in which the tyles are conspicuous, mostly regularly globular, the neck so thin that it is often broken in the preparations.

2) Spirasters. The larger ones, as a rule conspicuously and very regularly spined, reach a length of 70 μm; the smaller, thicker ones, are

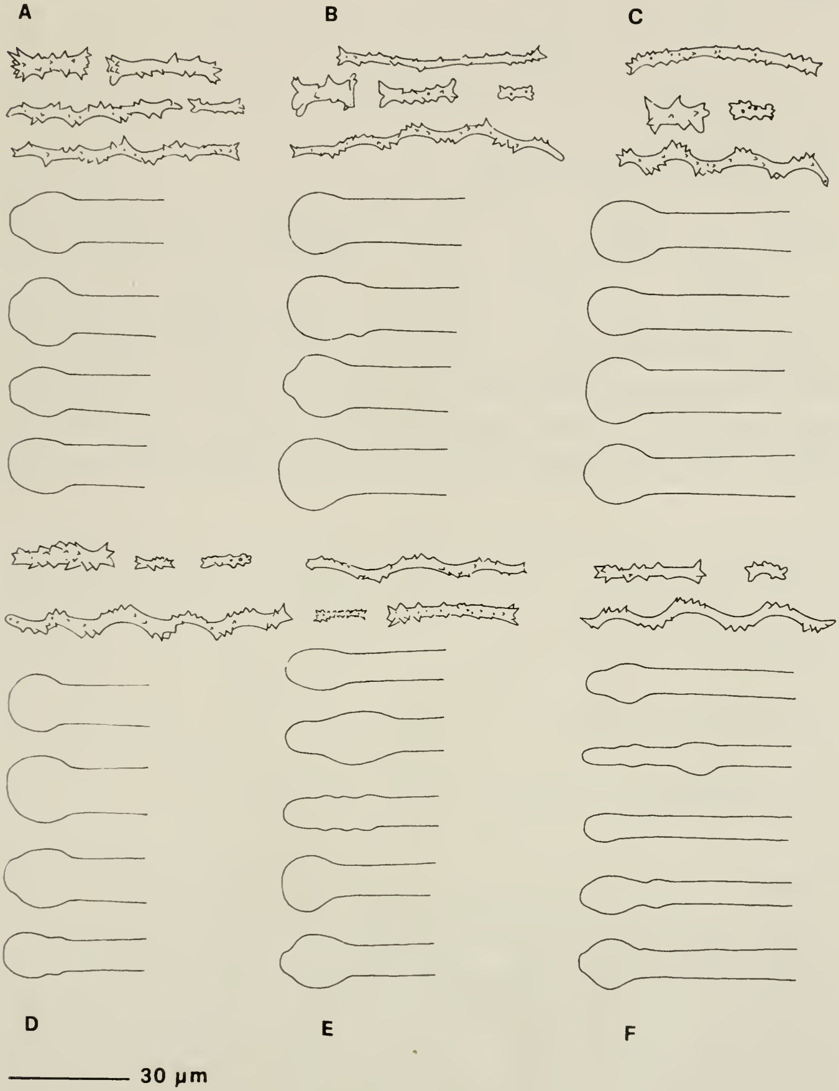

Fig. 25 - Spicules of *Cliona rhodensis*. A: SAL.25, B: SAL.51, C: SAL.190, D: SAL.30, E: GAR.2, F: GAR.25.

irregularly spined; the smallest ones are often irregularly tuberculated instead of spined. Also thin, elongated, irregularly spined spirasters may be present. In all these spicules, with the exception of the larger, spiral ones, the spines at the extremities of the axis are more pronounced.

Cliona cretensis sp. n.

Occurrence. Crete, Gournia, depth 1 m, superficial cavity, 20 September 1969. R.N. CRT.9.

Holotype (a spicule slide). MSNG 47165.

Description. (Fig. 26) The specimen was boring in calcareous rock, yellow. Only a spicule preparation is available.

Spicules. 1) Tylostyles fusiform, measuring 330-460 x 13.5-24 µm in the middle. The tyle is spherical to slightly trilobate, always well formed, never subterminal, smaller in diameter than the middle of the shaft. A strongylote shortening of the shaft is frequent. 2) Spirasters spiny, with 3 to 7 bends, measuring 20-65 x 2.5-5.5 µm without the spines, which reach about 2 µm. 3) Spirasters short and stout, feebly

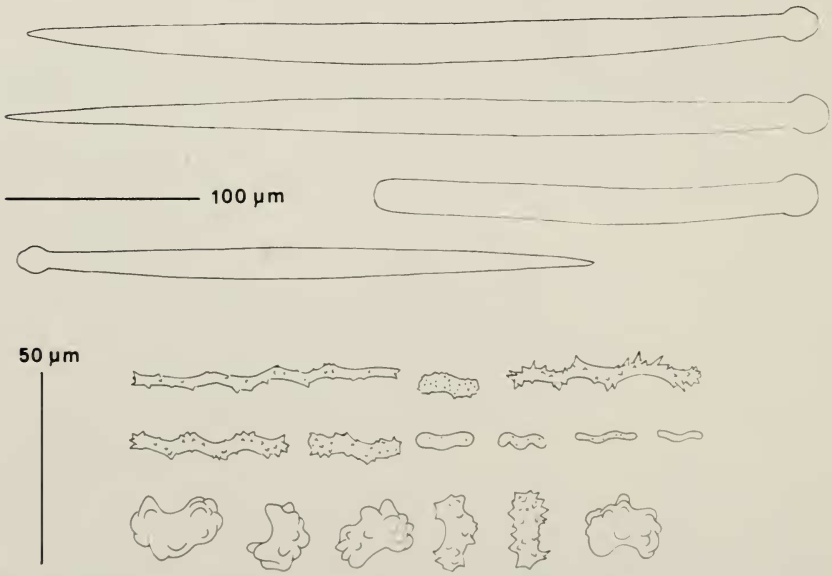

Fig. 26 - Spicules of *Cliona cretensis* sp. n.

spined or rough or almost smooth, with three little-marked bends, ends rounded, measuring 13.5-19 µm by about 4 µm. 4) Nodular spirasters measuring 20-25 x 10-15 µm.

Remarks. The nodulose microscleres may be compared with those of *Cliona argus* Thiele, *C. thoosina* Topsent, *C. chilensis* Thiele, three species in which they are the only microscleres present.

Cliona sp. 1

Occurrence. Porto Ercole, Isolotto, depth 0.5 m, rocky shore, 31 August 1963. R.N. 588.

Description. (Fig. 27) Boring on calcareous rock. Only a spicule preparation is available.

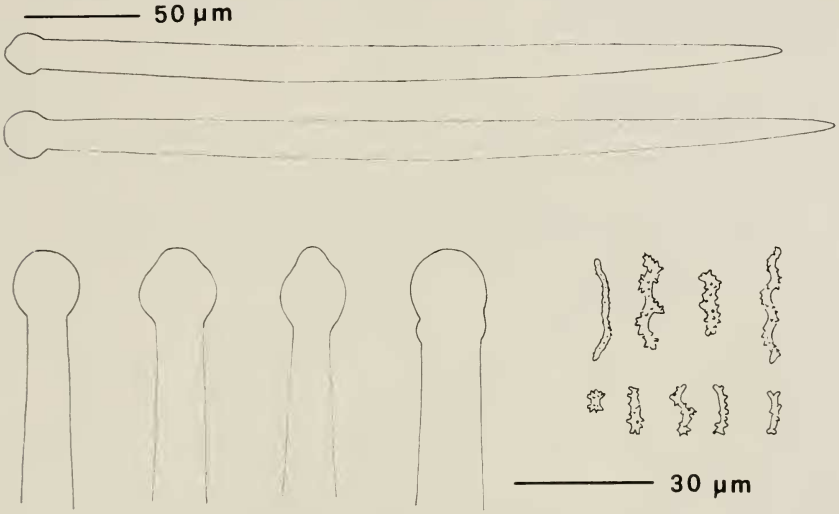

Fig. 27 - Spicules of *Cliona* sp. 1.

Spicules. 1) Tylostyles robust, fusiform, with short point, generally slightly curved at one third of their length. They are 270-380 µm long, with a diameter of 9-15 µm at the middle of their shaft. The tyles are distinct, globular or slightly trilobate, rarely subjected to the modifications that are common in this genus. They are a little larger than the shaft at its middle, 11-17.5 µm. 2) Spirasters measuring 10-25 µm, comparatively thick, mostly with one to six bends with short spines.

Some, among the smaller ones, are straight with irregular tubercles; a few, amphiaster-like, measure only 5 x 4 µm.

Cliona sp. 2

Occurrence. Leuca W., shallow water, rocky shore, cavity, 10 July 1967. R.N. SAL.147.

Description. (Fig. 28) Only a spicule slide is available. Field notes indicate the consistency as firm, the colour as red.

Spicules. 1) Tylostyles fusiform, gently curved at the first third of their length or almost straight, with short point, measuring 250-350 x 8-13 µm. Their tyle is well marked, generally mucronate or tri-lobate, often globular, sometimes subterminal, with a diameter slightly larger than that of the middle of the shaft, reaching 16 µm. 2) Spirasters short, thick, with irregular blunt spines, 8-12 µm long. They are rare in the preparation.

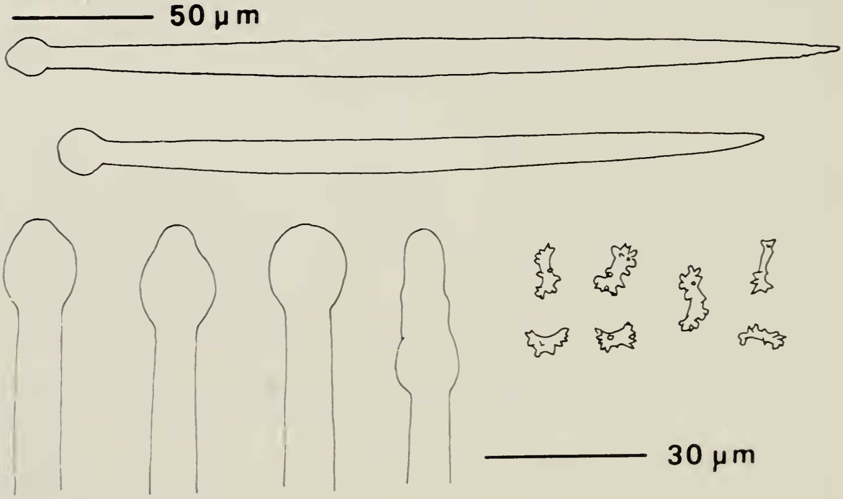

Fig. 28 - Spicules of *Cliona* sp. 2.

Alectona millari Carter

Alectona millari Carter, 1879a: 494

Occurrence. Leuca E., depth 4 m, superficial cave, diver, 9 July 1967. R.N. SAL.59.

Leuca W., depth 1-2 m, rocky shore, 8-10 July 1967. R.N. SAL.68, SAL.117, SAL.118.

Description. (Fig. 29) All specimens boring in calcareous rock, small, entirely used for spicule preparations.

Spicules. 1) Diactines. There is a remarkable difference in the size and spination of these spicules between specimen SAL.118 and the other ones. In the former they measure 160-270 x 11-16 μm including

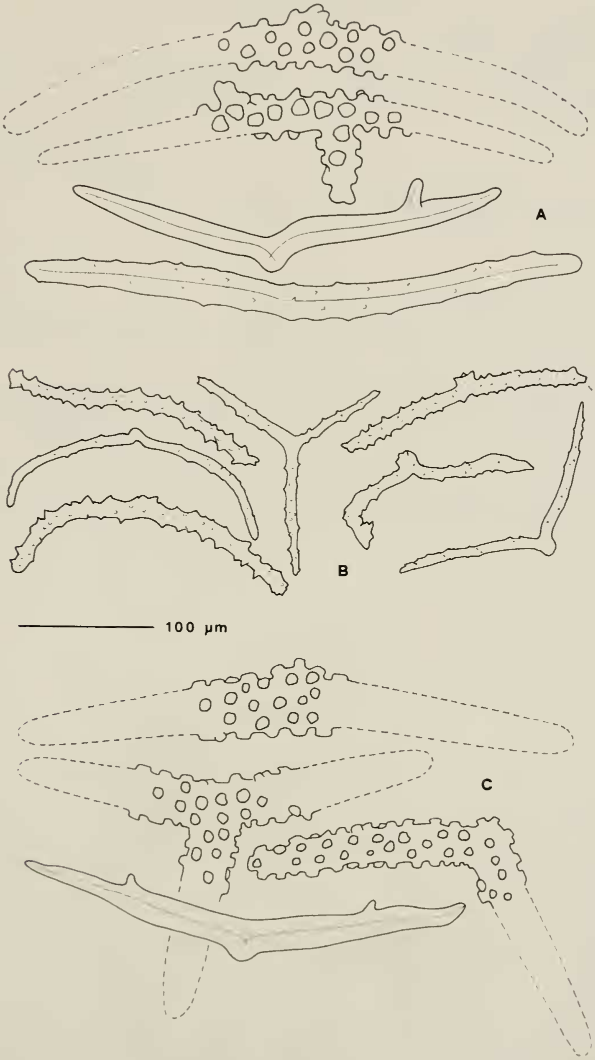

Fig. 29 - Diactines of *Alectona millari*. A: SAL.117, B: SAL.118, C: SAL.59.

the spines, which are conical. In the latter the diacts measure 240-460 x 27-54 µm and are tuberculated rather than spined, the tubercles being rounded or flattened, much as in the large diacts of *Alectona wallichii* (Carter). 2) Amphiasters. They are smaller in specimen SAL. 118 (12-25 µm) than in the other specimens (10-35, 20-40 and 26-54 µm).

Thoosa mollis Volz

Thoosa mollis Volz, 1939: 29

Occurrence. Leuca E., depth 0.5 m, superficial cave, 9 July 1967. R.N. SAL.31, SAL.71.

Description. (Fig. 30) SAL.71: boring in calcareous rock, white. SAL.31: abundant spicules found in a preparation, mixed with those of *Cliona schmidti*.

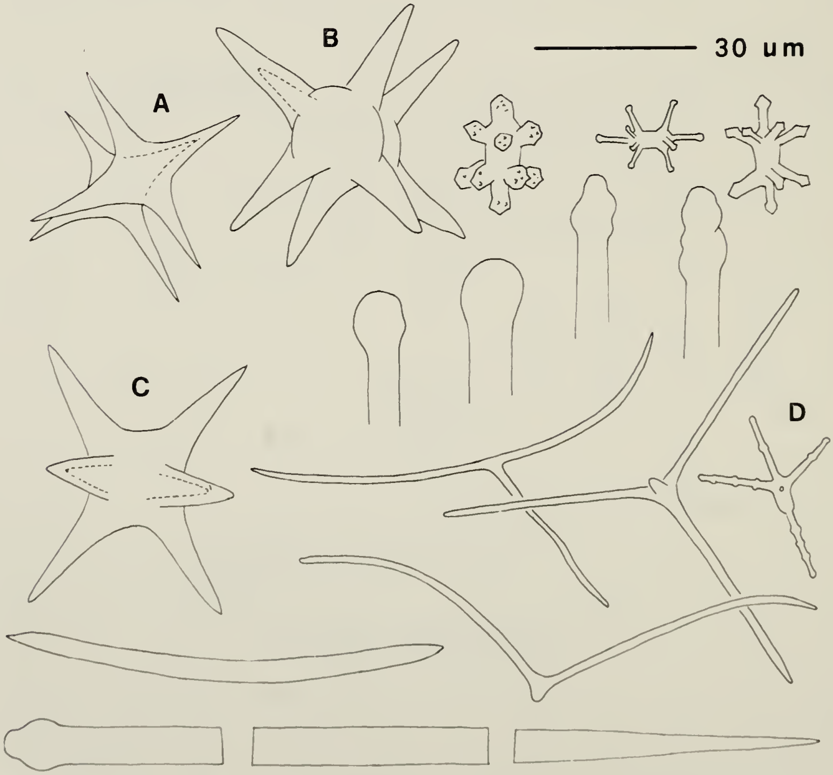

Fig. 30 - Spicules of *Thoosa mollis*.

Spicules. 1) Tylostyles nearly straight, 215-345 x 4-7 μm, tyle variable. 2) Oxeas 80-105 x 2.5-4 μm, abundant. 3) « Reduced oxyasters » generally with two, occasionally with three rays up to 55 μm long. 4) Amphiasters 15-25 μm long. 5) The puzzling spicule figured by VOLZ (Fig. 9,d, right) is here moderately frequent: it reveals itself as a kind of diplaster, quite regular, with four rays on one side and four symmetrical rays on the other side (Fig. 30, A, B, C). It appears irregular, but this is only due to the various inclinations it assumes in the preparations. It may reach the size of 70 μm. 6) A single spicule corresponding to the one figured by Volz in Fig. 9. d, left has been observed: its rays are polytylote (Fig. 30, D).

Cliothosa hancocki (Topsent)

Thoosa hancocci Topsent, 1888a: 81

Occurrence. Torre a Mare, depth 18 m, conglomerates, dredge, 25-27 September 1967. R.N. COR.29.

Torre a Mare, depth 15 m, conglomerates, diver, 30 September 1970. R.N. COR.187.

Porto Ercole, Isolotto, depth 0.5 m, rocky shore, 31 August 1963. R.N. 598.

Leuca W., depth 0-1 m, rocky shore, 8 July 1967. R.N. SAL.22.

Description. Boring in calcareous rock, yellow.

Spicules. 1) Tylostyles 300-450 x 7-14 μm. 2) Amphiasters 15-26 μm. They may be rare. Nodulose amphiasters have not been observed.

TETHYIDAE

Aaptos aaptos (Schmidt)

Ancorina aaptos Schmidt, 1864: 33

Occurrence. Bogliasco, depth 7 m, rock, diver, 11 November 1970. R.N. PF.234, PF.226.

Riva Trigoso, Punta Manara, depth 32-33 m, boulders, diver, 30 October 1970. R.N. PF.186, PF.172, PF.161.

Leuca W., depth 0.5 m, superficial cave, 8-10 July 1967. R.N. SAL.42, SAL.120, SAL.123.

Leuca E., depth 0.5 m, superficial cave, 9 July 1967. R.N. SAL.159.

Porto Tricase, depth 15 m, conglomerates, dredge, 22 September 1970. R.N. TRI.115.

Castro Marina, depth 25-35 m, conglomerates, dredge, 2 February 1968. R.N. TRI.81, TRI.76.

Porto Tricase, depth 23 m, conglomerates, dredge, 18 October 1967. R.N. TRI.29.

Bari, depth 15 m, conglomerates, dredge, 17 June 1970. R.N. COR.91, COR.98, COR.103.

Torre a Mare, depth 15 m, conglomerates, diver, 30 September 1970. R.N. COR.181.

Gargano, Baia di Campi, depth 2-10 m, rocks and mud, diver, 4-5 October 1967. R.N. GAR.16.

Gargano, Baia di Campi, depth 2-5 m, rocks and mud, diver, 15-21 September 1971. R.N. GAR.61.

Ponza, depth 1-2 m, rocky shore, diver, 5 July 1969. R.N. PZ.6, PZ.37.

Castellabate, depth 20 m, diver, 8 August 1971. R.N. CAB.29.

Tremiti Islands, I Pagliai, depth 0.5 m, superficial cave, 5 July 1966. R.N. PTR. C.15b.

Porto Ercole, Isolotto, depth 0.2 m, superficial cave, 9 September 1963. R.N. 551, 553.

Leuca W., depth 0.5 m, rocky shore, 22 September 1970. R.N. SAL.239.

Castro Marina, Zinzulusa Bay, depth 0-0.2 m, rocky shore, 13 September 1965. R.N. ZZ.47, ZZ.54.

Tethya aurantium (Pallas)

Alcyonium aurantium Pallas, 1766: 357

Occurrence. Torre a Mare, depth 15 m, conglomerates, diver, 22 June 1970. R.N. COR.137.

Limski Kanal, depth 1-4 m, rocks and sediment, diver, 29 September 1971. R.N. LI.5 to LI.8.

Gargano, Baia di Campi, depth 2-10 m, rocks and mud, diver, 15-21 September 1971. R.N. GAR.59a, GAR.59b, GAR.66a, GAR.66b.

Porto Ercole, Grotta Azzurra, depth 4 m, superficial cave, diver, 15 October 1971. R.N. 613.

Porto Tricase, depth 25 m, conglomerates, dredge, 16 November 1967. R.N. TRI.51.

Bari, depth 0.3-1 m, rocky shore, 10 October 1971. R.N. TI.24 to TI.29f.

Porto Cesareo, lagoon, depth 0.3-1 m, sand and rocks, 23 September 1971. R.N. PC.27 to PC.35, PC.37 to PC.43, PC.65a.

Bogliasco, depth 10-11 m, rock, diver, 8 December 1971. R.N. PF.231.

Description. See Table 1, Fig. 31.

Tethya citrina Sarà & Melone

Tethya citrina Sarà & Melone, 1965: 123

Occurrence. Gargano, Baia di Campi, depth 2-10 m, rocks and mud, diver, 4-5 October 1967. R.N. GAR.7.

Limski Kanal, depth 1-3 m, rocks and sediment, diver, 29 September 1971. R.N. LI.1 to LI.4.

Portofino, Altare, depth 50-70 m, mud and boulders, trammel, 5 March 1965. R.N. PF.3, PF.4.

Giannutri, Spalmatoi, depth 25 m, sand and mud, diver, September 1962. R.N. 522.

Bari, depth 0.3-1 m, rocky shore, 13 October 1971. R.N. TI.16, TI.23 to TI.23f.

Porto Cesareo, lagoon, depth 0.5-1 m, sand and rocks, 23 September 1971. R.N. PC.18 to PC.26b, PC.45 to PC.48, PC.50 to PC.54, PC.64.

Off Calvi, depth 135 m, detrital, trawl, 18 July 1975. R.N. NIS.11.7, NIS.19.7, NIS.25.2.

Off Calvi, depth 88 m, detrital, dredge, 4 August 1970. R.N. NIS.37.1.

Table 1. Specimens of *Tethya* examined. In paretheses are mean values.

					Spherasters		
	Specimens examined	Size mm	Depth m	Colour	Ray µm	Centrum µm	Ray/ centrum
Tethya aurantium	41	3-41 (28.34)	0.3-25	Orange	19-33 (25.07)	28-59 (43.17)	0.40-0.82 (0.58)
Tethya citrina	37	4-70 (27.05)	0.3-70	Yellow	19-56 (37.86)	15-40 (27.86)	1.00-2.00 (1.36)
	17	2-5 (3.29)	88-160	Unknown	11-25 (18.94)	12-19 (15.53)	0.92-1.54 (1.22)

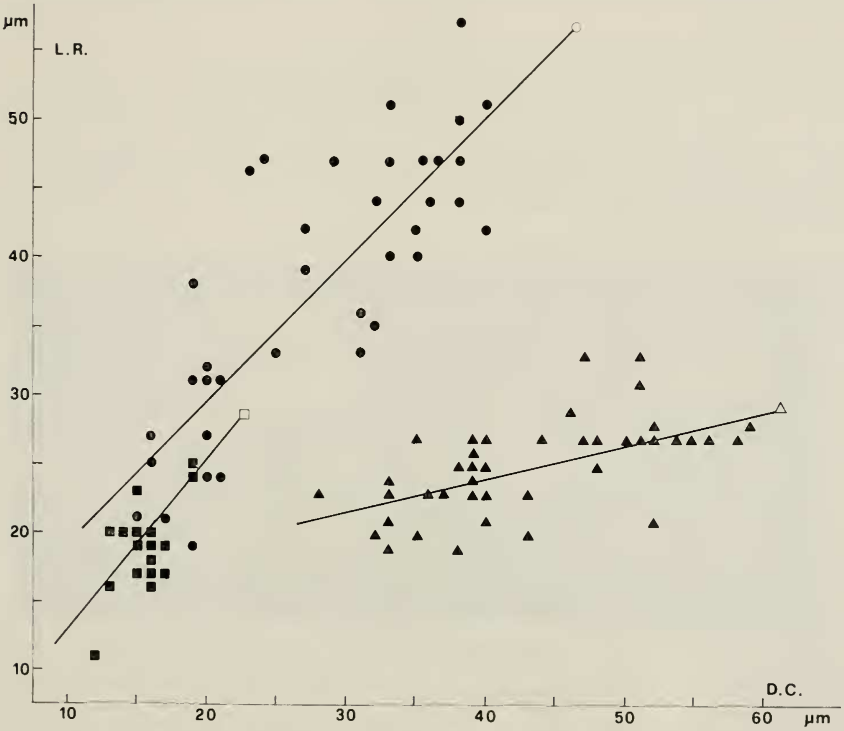

Fig. 31 - Spherasters of 95 specimens of *Tethya*. Relationship between length of ray (L.R.) and diameter of centrum (D.C.). Colour of living specimens: triangle = orange, circle = yellow, square = unknown. Straight lines indicate the linear regression of L.R. on D.C.

Off Calvi, depth 117-149 m, detrital, dredge, 14-18 July 1969. R.N. NIS.68.3, NIS.68.15, NIS.76.11, NIS.81.5, NIS.81.14, NIS.82.2, NIS.82.4, NIS.83.41, NIS. 83.54, NIS.85.9, NIS.85.16.

Banc du Magaud, depth 140-160 m, dredge, 19 September 1969. R.N. NIS. 86.8, NIS.86.20.

Off Camogli, depth 70 m, mud, trawl, April 1961. R.N. PF.113.

Description. See Table 1 and Fig. 31.

Remarks. The study of the *Tethya* specimens available in the collection indicates that the correlation between colour and ray to centrum ratio in the spherasters is constant, and may be regarded as taxonomically distinguishing *T. aurantium* and *T. citrina.*

The specimens marked NIS are characterized by a specific biotope of deeper water and by the small size of the individuals and of their spherasters. Their colour in life is not known: I have, tentatively, placed them in *T. citrina* on the basis of the ray to centrum ratio of their spherasters.

CHONDROSIIDAE

Chondrilla nucula Schmidt

Chondrilla nucula Schmidt, 1862: 39

Occurrence· Portofino, Olivetta, depth 20-30 m, rock, diver, 15 October 1962. R.N. PF.374.

Porto Tricase, depth 15 m, conglomerates, dredge, 24 September 1970. R.N. TRI.197, TRI.201.

S. Caterina, depth 2 m, rocky shore, 7 July 1967. R.N. SAL.8.

Limski Kanal, depth 1-5 m, rock and mud, diver, 29 September 1971. R.N. LI.12.

Portofino, Aurora, depth 20-30 m, rock, diver, October 1962. R.N. PF.112.

Portofino, Olivetta, depth 3-4 m, rocks and sand, diver, July 1964. R.N. PF.80.

La Spezia, Torre Scuola, depth 2-3 m, rock and mud, diver, 7 August 1966. R.N. SP.21.

Porto Ercole, Grotta Azzurra, depth 4-5 m, rock, diver, September 1962. R.N. 530.

Chondrosia reniformis Nardo

Chondrosia reniformis Nardo, 1847b: 267

Occurrence. Off Camogli, depth 50-70 m, mud, trawl, July 1961. R.N. PF.27.

Castellabate, depth 10 m, rock, diver, 19 August 1971. R.N. CAB.65, CAB.20, CAB.13.

Crete, Agio Nicolaos, depth 0-1 m, superficial cavity, 22 September 1969. R.N. CRT.23.

La Spezia, Torre Scuola, depth 2-3 m, rocks and mud, diver, 5 August 1966. R.N. SP.7, SP.20.

Portofino, Altare, depth 70 m, detrital, trammel, 15 March 1964. R.N. PF.151.

Porto Ercole, Grotta Azzurra, depth 3-5 m, rock, diver, 30 August 1963. R.N. 607.
Portofino, S. Fruttuoso, depth 10 m, rock, diver, 25 September 1964. R.N. PF.98.

Remarks. Specimen PF.27 shows no sign of attachment to the substratum.

PLACOSPONGIIDAE

Placospongia decorticans (Hanitsch)

Physcaphora decorticans Hanitsch, 1895: 214

Occurrence. Palese (Bari), depth 15 m, conglomerates, dredge, 23 June 1970. R.N. COR.175.
Leuca W., depth 0.3-1.5 m, superficial cave, 8-10 July 1967. R.N. SAL.19, SAL.43, SAL.121.
Leuca E., shallow water, superficial cave, diver, 22 September 1970. R.N. SAL.245.
Massa Lubrense, depth 8 m, underwater cave, diver, coll. Dr. F. Boero, 20 June 1980. R.N. CAB.86.

Description. (Fig. 32) All the specimens were small, encrusting or cushion-shaped. CAB.86 measures 9 x 4 mm; its colour in life was light brownish yellow.

Spicules. 1) Tylostyles to subtylostyles to styles, 160-540 x 5-8 μm. 2) Selenasters 55-75 μm. 3) Spherasters 10-14 μm. 4) Spirasters 7-15 μm.

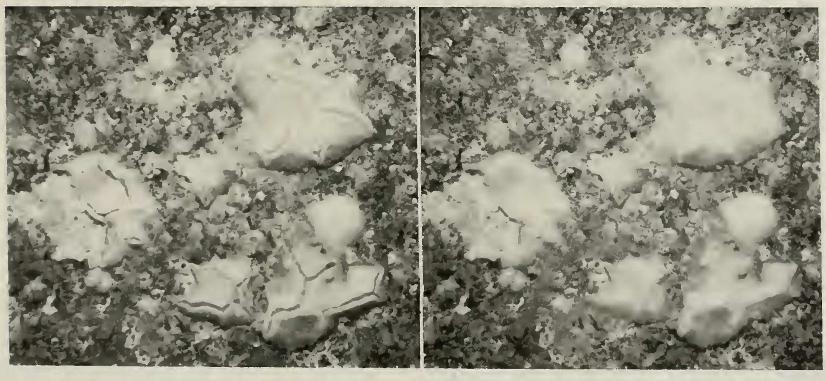

Fig. 32 - *Placospongia decorticans*, before and after having been disturbed. Underwater photograph by Dr. M. Pansini. x 0.8.

Remarks. I owe to Dr. F. Boero and to Dr. M. Pansini the observation that the cortical plates of the living sponge were wide open on deep cavities and that they quickly closed at the touch of the hand.

Such a system of water-exchange and behaviour within the genus *Placospongia* could have been inferred from some early descriptions, but had never been verified. CARTER (1880: 53) pointed out that it was through the separations between the cortical plates that communication with the interior was obtained. KELLER (1891: 325) stated that « Da Rindporen fehlen, so dienen die schlitzförmigen Oeffnungen der Kanten zur Einfuhr und Ausfuhr des Wassers ». A presence of muscular fibres connecting the plates had been mentioned by SOLLAS (1888: 272) and by LENDENFELD (1897: 49). Some more recent writers have been apparently misled by VOSMAER & VERNHOUT (1902) who, in their monograph on *Placospongia*, assumed that the described apertures between the plates were « nothing but folds of the contracted grooves ».

TIMEIDAE

Timea crassa (Topsent)

Hymedesmia hallezi crassa Topsent, 1900: 120

Occurrence. Taranto, Mar Piccolo, depth 0.3-0.4 m, mud and pebbles, 18 July 1973. R.N. PC.123.

Description. (Fig. 33) Thin encrustation on a pebble, soft, smooth, orange.

Spicules. 1) Tylostyles 580-990 x 7-14 µm, tyle scarcely developed. 2) Asters. The smaller ones appear as tylasters, 7-8 µm in diameter. The larger ones, 12-22 µm in diameter, are variable, with terminally pointed, or rounded, rarely truncated rays. Some, with pointed rays, are smooth, but most of the asters are more or less spined. Only occasionally one ray may be bifid.

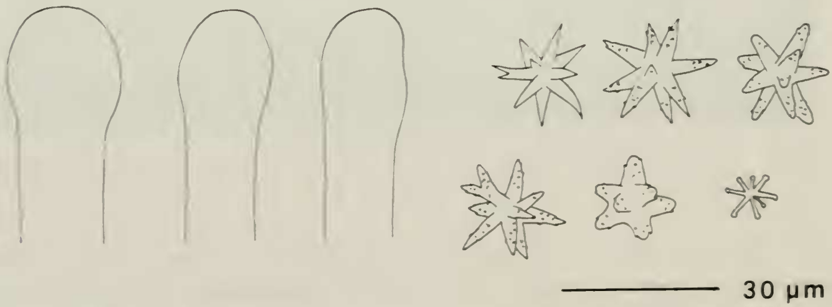

Fig. 33 - Spicules of *Timea crassa*.

Remarks. The spiculation agrees very closely with TOPSENT's description (1925a: 6) of specimens from Thau, a comparable habitat.

Timea unistellata (Topsent)

Hymedesmia unistellata Topsent, 1892b: XXVII

Occurrence. Tremiti Islands, S. Domino, Punta Diamante, depth 0-4 m, superficial cave, diver, 5 July 1966. R.N. PTR.C.4.

Tremiti Islands, S. Domino, Punta Provvidenza, depth 9-12 m, underwater cave, diver, July 1966. R.N. PTR.F.18, PTR.F.21b.

Zinzulusa Bay, depth 1-2 m, rocky shore, diver, 8 July 1967. R.N. ZZ.27b.

Leuca E., depth 0.5-1 m, superficial cave, 22 September 1966. R.N. SAL.221, SAL.222.

Description. All the specimens were small, thin encrustations, red.

Spicules. 1) Tylostyles 300-420 x 3-5.5 µm. 2) Spherasters 13-26 µm.

Timea stellata (Bowerbank)

Hymedesmia stellata Bowerbank, 1866: 150

Occurrence. Palese (Bari), depth 15 m, conglomerates, dredge, 2 April 1969. R.N. TI.31.

Description. A very small encrustation, lemon yellow.

Spicules. 1) Tylostyles 135-900 x 2.5-9 µm. 2) Asters with a diameter of 8-13 µm. They are for the most part typically strongylasters without centrum, but there are also some with conical rays (spined at the truncated end) and a more or less conspicuous centrum.

Timea simplistellata sp. n.

Occurrence. Off Calvi, depth 123-147 m, detrital, dredge, 15 July 1969. R.N. NIS.83.30, NIS.83.2.

Holotype (NIS.83.30). MSNG 47166.

Description. (Fig. 34) This species is represented by thick encrustations on small fragments of branching bryozoa. The specimens, preserved in spirit, have an even and shiny surface, with a long, sparse hispidation. The consistency is firm, the colour is a very light violet (about c.c.19).

Spicules. 1) Tylostyles never straight, but curved, sometimes slightly sinuous, measuring 1600-2500 x 12-21 µm. 2) Spheroxyasters with small centrum, with twelve to fifteen actines pointed and smooth, diameter 27-44 μm. These spicules are remarkably uniform in size and shape.

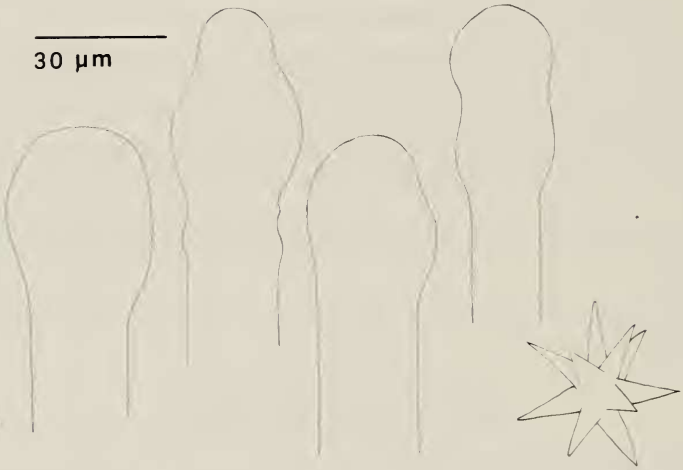

Fig. 34 - Spicules of *Timea simplistellata* sp. n.

Remarks. This species may be compared with *Timea chondrilloides* (Topsent) as originally described (1904: 113). The spheroxyasters are the same, and the megascleres have the same length. The latter, however, in Topsent's specimen were not tylostyles, but pure styles.

Timea bifidostellata sp. n.

Occurrence. Palese (Bari), depth 15 m, conglomerates, dredge, 2 April 1969. R.N. TI.30.

Holotype (a spicule slide). MSNG 47167.

Description. (Fig. 35) The specimen was a small encrustation, colourless according to field notes, entirely used for a spicule preparation.

Spicules. 1) Subtylostyles often with hardly perceptible tyle, straight, measuring 230-600 x 4.5-9.5 μm. 2) Spherasters peculiar, with actines thick at their base, scarcely differentiated, bifid or branched or bearing some secondary actine, diameter 11-16 μm.

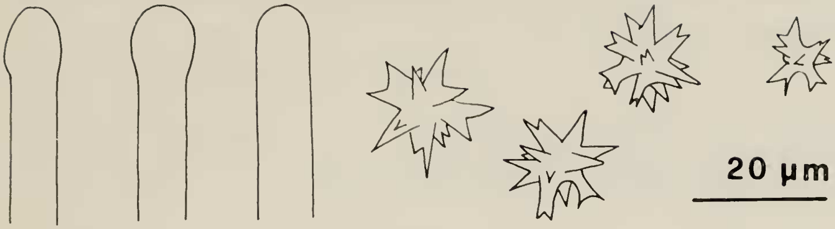

Fig. 35 - Spicules of *Timea bifidostellata* sp. n.

Diplastrella bistellata (Schmidt)

Tethya bistellata Schmidt, 1862: 45

Occurrence. Zinzulusa Bay, depth 1-3 m, rocky shore, diver, 8 July 1967. R.N. ZZ.13.

Porto Tricase, depth 30 m, conglomerates, dredge, 24 September 1970. R.N. TRI.147, TRI.163.

Bogliasco, depth 15 m, rocks, diver, 11 November 1970. R.N. PF.250.

Off Calvi, depth 123-125 m, detrital, dredge, 18 July 1969. R.N. NIS.68.2.

Description. Small encrustations; colour in life: ZZ.13: orange (C.C.187); TRI.147: orange yellow; TRI.163: light orange; PF.250: dull orange, interior lighter.

Spicules. 1) Tylostyles 320-620 x 6.5-14 μm. 2) Diplasters 13-50 μm.

Remarks. The double-aster character, generally quite conspicuous in the smaller microscleres and also in many of the well-developed ones, is only faintly apparent in specimen NIS.68.2.

Diplastrella ornata Rützler & Sarà

Diplastrella ornata Rützler & Sarà, 1962: 231

Occurrence. Crete, Gournia, depth 1-2 m, superficial cave, diver, 20 September 1969. R.N. CRT.4, CRT.6, CRT.8.

Dubrovnik, depth 10-20 m, detrital, dredge, 16 July 1967. R.N. DUB.12.

Leuca W., depth 1.5 m, rocky shore, diver, 8 July 1967. R.N. SAL.21.

Leuca W., depth 1-2 m, superficial cave, diver, 10 July 1967. R.N. SAL.139, SAL.141, SAL.144.

Description. All the specimens were very small encrustations.

Spicules. 1) Tylostyles 320-800 x 13-26 μm. 2) Diplasters up to 86 μm in diameter, the larger with actines characteristically complicated. The medium-sized ones sometimes (rarely) may assume the shape of a thick spiraster, which does not appear to represent a separate category of microscleres.

Remarks. In the preparations of some of these specimens some small oxeas may be observed. They are here regarded as foreign: neither their number nor their shape appear to confirm that this species, as originally described, possesses small oxeas.

LATRUNCULIIDAE

Didiscus styliferus Tsurnamal

Didiscus styliferus Tsurnamal, 1969b: 343

Occurrence. Leuca E., depth 4 m, superficial cave, diver, 9 September 1965. R.N. SAL.231.

Zinzulusa Bay, depth 2-4 m, rocky shore, diver, 8 July 1967. R.N. ZZ.32.

Porto Tricase, depth 25 m, conglomerates, dredge, 16 November 1967. R.N. TRI.52.

Porto Tricase, depth 15 m, conglomerates, diver, 22-24 September 1970. R.N. TRI.85, TRI.93, TRI.215.

Castellabate, rocky slope, diver, July 1971. R.N. CAB.83.

(Typical discorhabds have been also observed, as foreign spicules, in several preparations of material from the Island of Crete).

Description. All the specimens are small, inconspicuous, cushion-shaped or encrusting. The colour was noted for SAL.231: greenish brown, TRI.85 and TRI.93: light brown-yellow, TRI.215: dirty yellow. The species seems to require shadowed conditions (TRI.85 and TRI.93 were found underneath calcareous algae in total darkness).

Spicules. 1) Oxeas 120-290 x 2.4-7 μm, sometimes slightly centrotylote, very rarely modified to strongyles. 2) Styles 500-1000 (probably more) x 7-8.5 μm. They are rare or even missing in some preparations. 3) Tylostyles with irregular tyle, 126-160 x 7-8 μm. 4) Discorhabds rough, axis mostly strongylote, 40-65 μm long, 2-4 μm thick, larger disc 10-12 μm (exceptionally 15 μm), smaller disc 6-7 μm. They show innumerable variations: the discs may be rudimental or reduced to a single swelling; strongylote axes are the most frequent, but oxeote ones are always present (they predominate in specimen ZZ.32). These microscleres are stouter and longer in specimen TRI.52, reaching 90 μm in length and 5 μm in thickness.

Remarks. CAB.83 (from the Gulf of Salerno) is represented only by a few discorhabds in a preparation, but it may be assumed as highly probable that it belongs to the present species, as well as the

Didiscus sp. that I have recorded from the Bay of Naples (1978: 51). The presently known distribution of this species does not appear to support the hypothesis of its recent migration through the Suez Canal.

Latrunculia tarentina sp. n.

Occurrence. Gulf of Taranto, depth 60 m, February 1961, coll. Ist. Talassografico of Taranto. R.N. PC.89.

Holotype. Istituto Sperimentale Talassografico, Taranto. Coll. 14/426.

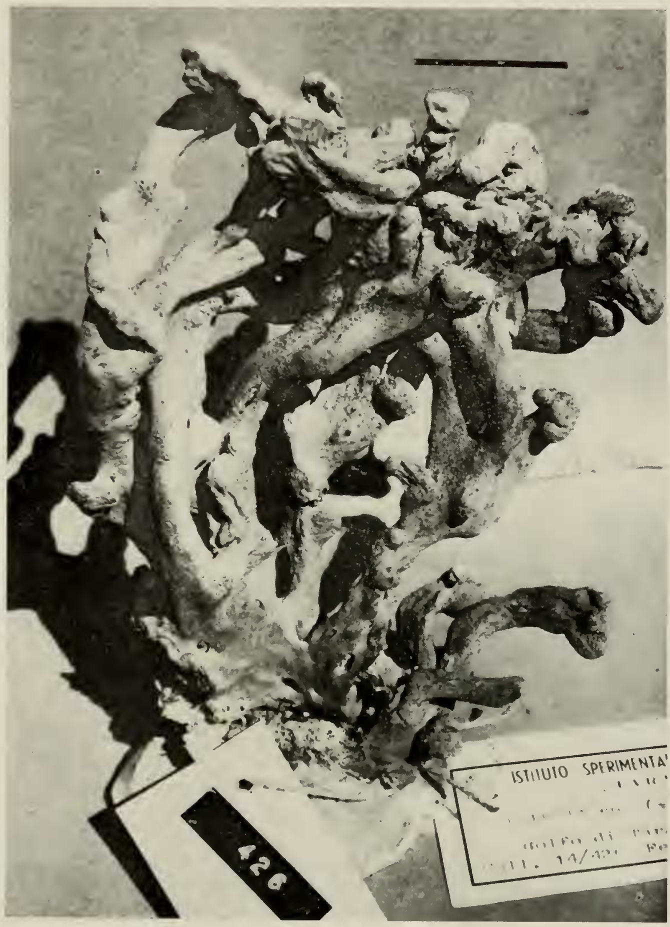

Fig. 36 - Holotype of *Latrunculia tarentina* sp. n. Photograph by Ist. Sper. Talass. Taranto. Scale: 3 cm.

Description. (Figg. 36, 37) The specimen is erect, with irregular, flattened, lobate, tortuous branches often anastomosing, starting from a common base. In the dry state, the sponge is 15 cm high and 8 cm across. The colour is beige, the consistency firm, scarcely resilient, rather fragile. The surface is smooth, with pores about 200 μm in diameter, 200-300 μm apart. Oscules are not clearly recognizable.

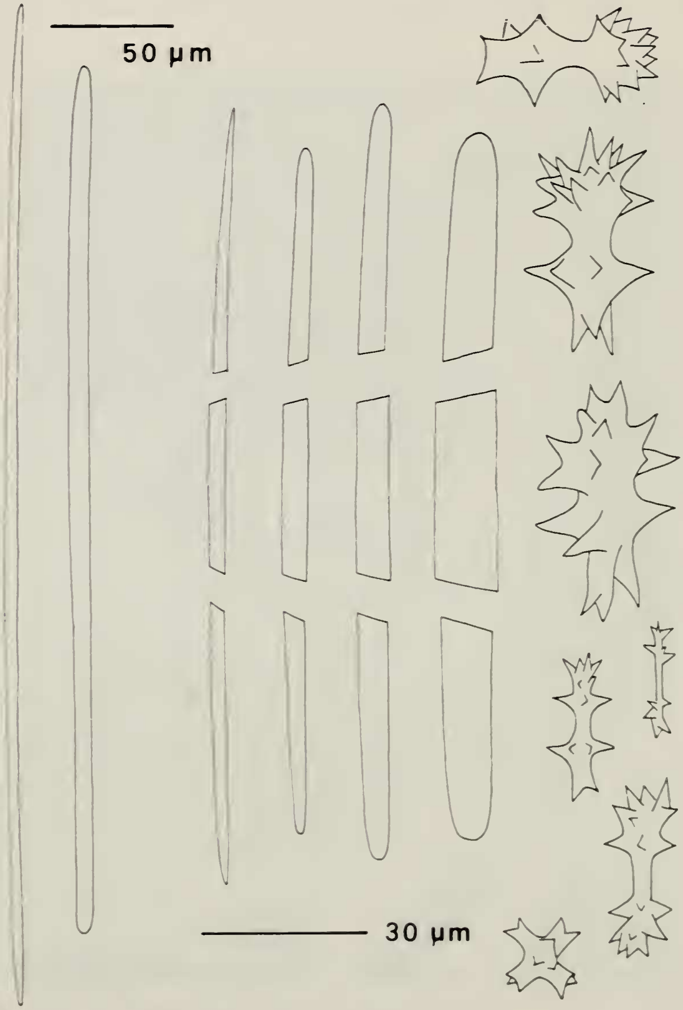

Fig. 37 - Spicules of *Latrunculia tarentina* sp. n.

A cortex, coriaceous and resilient, about 300 μm thick, is neatly separable. It is consolidated by a bidimensional network of spongin fibres, light amber-coloured, about 40 to 160 μm thick, forming mostly oval meshes 80-200 μm wide. Not abundant megascleres are embedded in the fibres, rather irregularly arranged. At the surface there are very abundant discorhabds which, however, do not form a continuous crust.

Brushes of megascleres, radially arranged, not projecting beyond the surface, connect the ectosomal structure with the choanosome. In the fragment available to me (the terminal part of a branch) the choanosomal skeleton consists of multispicular dense fascicles of megascleres, mostly ascending, irregularly bound by spongin. It is possible, and probable, that in the older parts of the sponge a more organized spiculo-fibrous network may be present. The scattered discorhabds are abundant.

Spicules. 1) Oxeas to strongyles, straight or gently curved, with axial canal often appearing blackened, measuring 270-420 x 5-11 μm. The most common spicule is an oxea with blunt ends, about 400 μm long and 6-7 μm thick; thicker, strongylote forms are less frequent. 2) Discorhabds measuring 24-41 μm. Young stages of this microsclere show that it originates from a sanidaster having, besides the two groups of oblique terminal spines, two whorls of spines about perpendicular to the shaft.

Remarks. Because of its erect branching habit and its diactinal megascleres this sponge appears near to species known from the Red Sea, *Latrunculia corticata* Carter (1879b: 298), *L. magnifica* Keller (1889: 402) and the sponge identified as *L. corticata* by TOPSENT (1906: 565), later (1928: 47) recognized as distinct by the same author. It might be even conspecific with the latter: unfortunately, Topsent did not give a figure of its spicules.

AXINELLIDA

AXINELLIDAE

Axinella damicornis (Esper)

Spongia damicornis Esper, 1794: 249

Occurrence. Porto Tricase, depth 60 m, detrital, trammel, 24 September 1970. R.N. TRI.245.

Porto Ercole, Isolotto, depth 6-10 m, underwater cave, diver, 5 September 1962. R.N. 507b.

Porto Ercole, Grotta Azzurra, depth 6-12 m, superficial cave, diver, 5 September 1963. R.N. 527, R.N. 568.

Tremiti Islands, S. Domino, Punta Diamante, depth 0-4 m, superficial cave, diver, 5 July 1966. R.N. PTR.C.1.

Tremiti Islands, S. Domino, Cala Tonda, depth 2-5 m, superficial cave, diver, July 1966. R.N. PTR.D.10.

Tremiti Islands, Cala Sorrentino, depth 2-3 m, superficial cave, diver, July 1966. R.N. PTR.E.19.

Castellabate, Punta Pagliarulo, depth 11-12 m, rock, diver, 27-29 July 1971. R.N. CAB.17.

Tremiti Islands, S. Domino, Grotta delle Viole, depth 8 m, superficial cave, diver, 23 July 1968. R.N. PTR.H.3.

Zinzulusa Bay, depth 2-4 m, rocky shore, diver, 8 July 1967. R.N. ZZ.5.

Off Calvi, 78-100 m, detrital, dredge, 2-4 August 1970. R.N. NIS.37, NIS.56.11, NIS.56.12, NIS.57.

Portofino, Lighthouse, depth 15-20 m, rocky slope, diver, 15 October 1962. R.N. PF.365.

Banc du Magaud, depth 140-160 m, dredge, 19 September 1969. R.N. NIS. 86.3, NIS.86.4.

Between Cap Ferrat and Cap d'Ail, depth 43 m, detrital, dredge, 21 October 1971. R.N. NIS.32.3.

Between Cap Ferrat and Cap d'Ail, depth 76 m, detrital, dredge, 15 September 1971. R.N. NIS.65.1.

Axinella verrucosa (Esper)

Spongia verrucosa Esper, 1794: 275

Occurrence. Porto Tricase, depth 60 m, detrital, dredge, 24 September 1970. R.N. TRI.282.

Between Cap Ferrat and Cap d'Ail, depth 76 m, detrital, dredge, 15 September 1971. R.N. NIS.65.

Axinella cannabina (Esper)

Spongia cannabina Esper, 1794: 249

Occurrence. Porto Cesareo, depth 25 m, dredge, 15 November 1962. R.N. PC.133.

Porto Tricase, depth 23 m, conglomerates, dredge, 18 October 1967. R.N. TRI.11.

Capo Vaticano, depth 10-15 m, rocks, diver, 6 August 1974. R.N. PAN.59.

Gargano, Baia di Campi, depth 5-10 m, rocks and mud, diver, 4-5 October 1967. R.N. GAR.23.

Axinella polypoides Schmidt

Axinella polypoides Schmidt, 1862: 62.

Occurrence. Castellabate, depth 26 m, diver, 25 August 1971. R.N. CAB.85.

Portofino, Altare, depth 30 m, rocks, diver, 20 September 1963. R.N. PF.129

Porto Ercole, Grotta Azzurra, depth 12 m, rocky slope, diver, September 1962. R.N. 544.

Portofino, Altare, depth 45 m, boulders, trammel, 30 March 1965. R.N. PF.6.

Axinella minuta Lévi

Axinella minuta Lévi, 1957: 205

Occurrence. Off Calvi, depth 123-125 m, detrital, dredge, 18 July 1969. R.N. NIS.68.10.

Description. (Fig. 38) The specimen is slightly, irregularly branching, 15 mm high, 11 mm wide, branches 0.5 mm thick, hispid. It has been entirely used for preparations.

Spicules. 1) Styles 1300-1700 x 11.5-30 μm, almost straight, sometimes bearing a sub-basal swelling, not abundant. 2) Styles 150-490 x 5.5-14 μm, generally curved near the base, abundant. Intermediates with the former category are very rare. 3) Oxeas very variable, 180-600 x 4.5-14 μm, curved or bent (sometimes asymmetrically), sometimes straight.

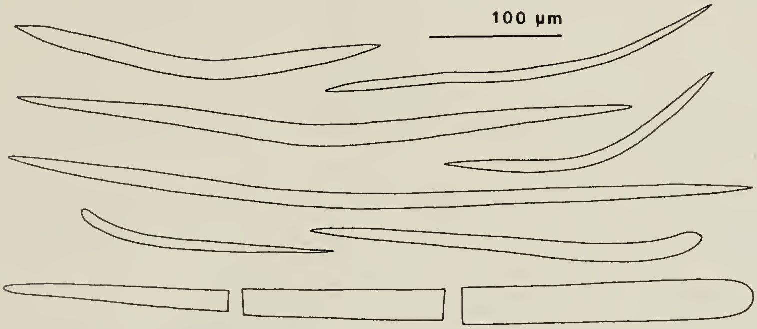

Fig. 38 - Spicules of *Axinella minuta*.

Axinella sp. A

Occurrence. Off Calvi, depth 121-149 m, detrital, dredge, 14 July 1969. R.N. NIS.81.9.

Description. (Fig. 39) The specimen is erect on narrow base of attachment, a slightly claviform cylinder strongly hispid, 15 mm high, 2.5 mm in maximum diameter. It has been entirely used for preparations.

Spicules. 1) Styles 1100-1700 x 11-19 μm, slightly curved, abundant. 2) Oxeas 600-1150 x 9-17 μm, curved, often asymmetrically, also flexuous, abundant. 3) Styles 100-280 x 4.5-12 μm, curved near the base, very abundant. Intermediate sizes with category 1) are rare. 4) Oxeas 120-230 x 3.5-7 μm, curved or bent, very abundant.

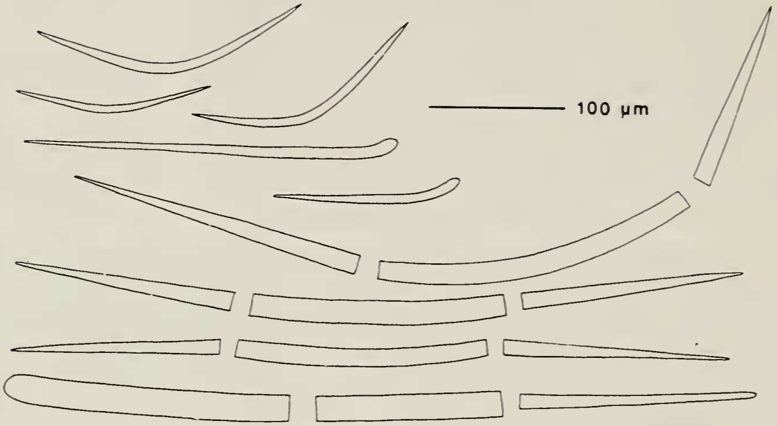

Fig. 39 - Spicules of *Axinella* sp. A.

Axinella sp. B

Occurrence. Off Calvi, depth 139-142 m, detrital, dredge, 16 July 1969. R.N. NIS.70.5.

Description. (Fig. 40) The specimen is 14 mm high, somewhat irregularly flattened, 2 mm in maximum diameter, very hispid. It has been entirely used for preparations.

Spicules. 1) Styles 570-1450 x 11-19 µm, slightly curved. 2) Oxeas 530-950 x 11-21 µm, curved, mostly asymmetrically. 3) Oxeas 140-280 x 4.5-7 µm, slightly and evenly curved, sometimes straight, most of them measuring 150-190 µm, the larger ones being rare.

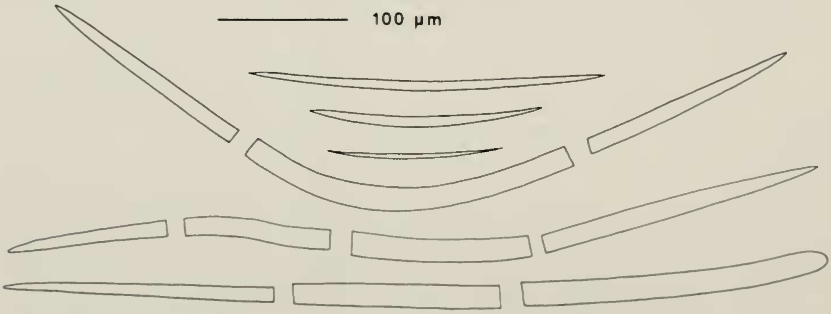

Fig. 40 - Spicules of *Axinella* sp. B.

Axinella sp. C

Occurrence. Off Calvi, depth 121-149 m, detrital, dredge, 14 July 1969. R.N. NIS.85.2.

Description. (Fig. 41) The specimen is a digitation 8 mm high, 0.5 to 1 mm thick, widening at the base of attachment. It has been entirely used for preparations.

Spicules. 1) Styles 900-1900 x 14-16 μm, very slightly curved, not abundant. 2) Styles 110-500 x 4.5-16 μm, curved near the base. For the most part they measure 150-250 μm. Intermediates with the former category are rare. 3) Oxeas 150-340 x 4.5-9 μm, regularly bent.

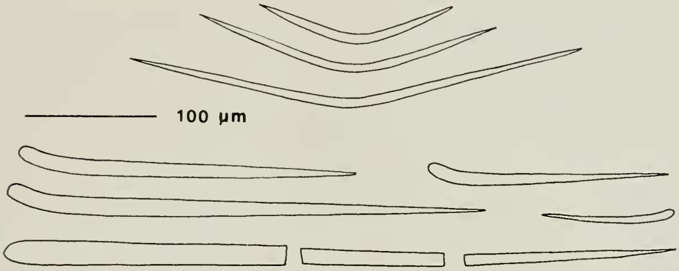

Fig. 41 - Spicules of *Axinella* sp. C.

Acanthella acuta Schmidt

Acanthella acuta Schmidt, 1862: 65

Occurrence. Porto Tricase, depth 30 m, conglomerates, dredge, 9 September 1970. R.N. TRI.154.

Porto Tricase, depth 60 m, detrital, trammel, 24 September 1970. R.N. TRI.263.

Gargano, Baia di Campi, depth 2-5 m, rocks and mud, diver, 15-21 September 1971. R.N. GAR.65.

Tremiti Islands, Punta Provvidenza, depth 9-12 m, underwater cave, diver, July 1966. R.N. PTR.F.20.

Gallipoli, depth 1-10 m, superficial cave, diver, 17 September 1966. R.N. SAL.196.

Porto Ercole, Isolotto, depth 6-10 m, underwater cave, diver, September 1962. R.N. 506, 534.

Castellabate, Punta Pagliarolo, depth 12 m, rocky slope, diver, 27 July 1971. R.N. CAB.14, CAB.23.

Portofino, Olivetta, depth 3 m, rocky shore, diver, 19 June 1965. R.N. PF.43.

Portofino, S. Fruttuoso, depth 10 m, overhang, diver, 25 September 1964. R.N. PF.99.

Bogliasco, depth 7 m, rocky slope, diver, 8 June 1972. R.N. PF.340.

Portofino, Olivetta, depth 25 m, sand and rocks, diver, 30 August 1962. R.N. PF.355, PF.356.

La Spezia, Torre Scuola, depth 2-4 m, rocks and mud, diver, 5 August 1966. R.N. SP.1.

Porto Ercole, Grotta Azzurra, depth 6-12 m, superficial cave, diver, 5 September 1963. R.N. 585.

Ceratopsion minor sp. n.

Occurrence. Off Calvi, depth 139-142 m, detrital, dredge, 16 July 1969. R.N. NIS.74.5.

Holotype (a spicule slide). MSNG 47168.

Description. (Fig. 42) The specimen is cylindrical, erect on agglomerated debris, 15 mm high, 1 mm thick, moderately hispid, hard. It has been entirely used for preparations.

Spicules. 1) Styles 1000-1400 x 7-16 µm, slightly curved, not abundant. 2) Diactines vermiculate up to 1150 x 9.5 µm, ends strongylote, not abundant. 3) Styles 190-500 x 11-19 µm. The curvature is slight, uniform or close to the base. 4) Oxeas, ectosomal, 100-125 x 2.5-5 µm, slightly and evenly curved, abundant.

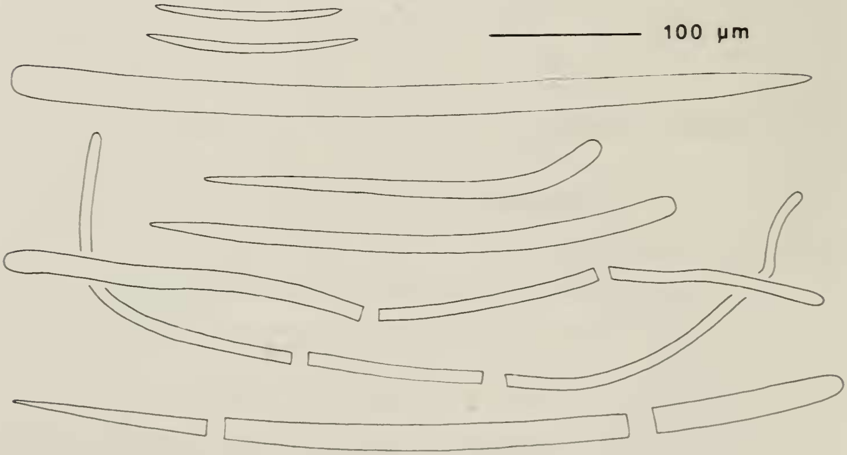

Fig. 42 - Spicules of *Ceratopsion minor* sp. n.

Remarks. The genus *Ceratopsion* Strand (for *Ceratopsis* Thiele, 1898: 57) is new for the European waters. The present species, owing to the possession of vermicular strongyles, is nearest to *Ceratopsion clavata* (Thiele, 1898: 57) from Japan and to *C. microxephora* (Kirkpatrick, 1903: 242) from South Africa.

Auletta pedunculata (Topsent)

Axinella pedunculata Topsent, 1896: 131

Occurrence. Off Calvi, depth 117 m, detrital, dredge, 15 July 1969. R.N. NIS.82.22.

Description. (Fig. 43, 44) The specimen is erect, pedunculate, hispid, 14 mm high.

Spicules. 1) Styles very slightly curved, rarely pure, generally with reduced base, measuring 640-860 x 10-15 μm. 2) Diactines tortuous, often anisodiametric, generally with strongylote extremities, sometimes (the smaller ones) oxeote. Size 370-1200 x 8-15 μm.

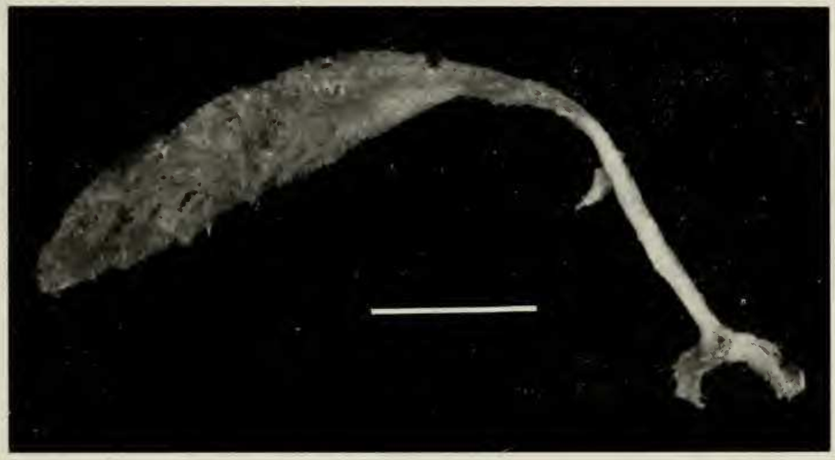

Fig. 43 - *Auletta pedunculata*, specimen NIS.82.22. Scale: 0.3 cm.

Remarks. The present identification is mainly based on spiculation, with particular regard to the uncommon character of the styles with reduced base. It must be noted, however, that the peculiar structure observed by Topsent (1934a: 40), which led him to transfer this species from *Axinella* to *Auletta*, has not been checked in the present specimen, owing to its small size.

Phakellia rugosa (Bowerbank)

Dictyocylindrus rugosus Bowerbank, 1866: 119

Occurrence. Porto Tricase, depth 60 m, dredge, 24 September 1970. R.N. TRI.224.

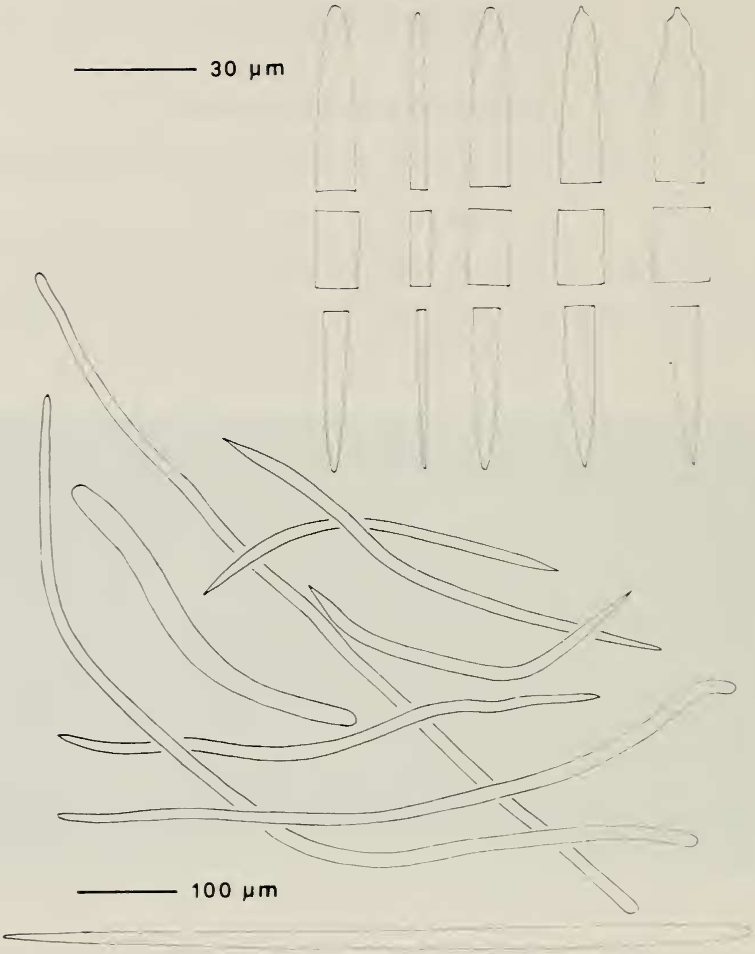

Fig. 44 - Spicules of *Auletta pedunculata*.

Description. The specimen is very small, irregularly digitate, orange.

Spicules. 1) Flexuous diactines with strongylote or oxeote ends, often anisodiametric, measuring up to 1100 x 8 μm. 2) Styles slightly curved, rarely straight, sometimes slightly flexuous, with base always attenuated, measuring 600-1000 x 7-13.5 μm. These spicules are exactly as figured by KOLTUN (1959: Fig. 154).

Remarks. This species is new for the Mediterranean Sea.

Pseudotrachya oxystyla Sarà

Pseudotrachya oxystyla Sarà, 1959: 3

Occurrence. Off Calvi, depth 135 m, detrital, trawl, 18 July 1975. R.N. NIS.19.6a, NIS.19.6b, NIS.12.

Description. The three specimens are globular, respectively 6, 9 and 18 mm in diameter. There is a distinct thin cortex with a skeleton made by a dense palisade of small oxeas. Very long hispidating megascleres are implanted on it. The choanosomal skeleton is distinct, dense, in more or less confused tracts.

Spicules. 1) Oxeas-Styles modified. With dissimilar extremities, these spicules may be interpreted as styles with attenuated base or as oxeas with shortened, more or less rounded proximal end. Among the not so large ones, some regular oxeas are also present. The size observed is up to 3000 x 40 μm, but some broken spicules appear to exceed this length. 2) Oxeas measuring 130-220 x 2.5-4 μm.

Remarks. This species has been synonymized with *Pseudotrachya hystrix* (Topsent) by VACELET (1969: 178), but I should prefer, at the moment, to regard it as distinct.

BUBARIDAE

Bubaris vermiculata (Bowerbank)

Hymeraphia vermiculata Bowerbank, 1866: 141

Occurrence. Bari, depth 15-30 m, conglomerates, dredge, 17-23 June 1970. R.N. COR.109, COR.118, COR.177.

Torre a Mare, depth 18-30 m, conglomerates, diver, 22 June 1970. R.N. COR.150.

Tremiti Islands, S. Domino, Cala Tonda, depth 2 m, superficial cave, diver, July 1966. R.N. PTR.D.6b.

Gargano, Baia di Campi, depth 2-6 m, rocks and mud, diver, 4-5 October 1967. R.N. GAR.39.

Porto Tricase, depth 30 m, conglomerates, dredge, 24 September 1970. R.N. TRI.169.

Portofino, Altare, depth 50 m, trammel, 2 August 1965. R.N. PF.24.

Off Calvi, depth 121-149 m, detrital, dredge, 14-18 July 1969. R.N. NIS.68.1, NIS.83.10, NIS.83.45.

Off Calvi, depth 78 m, dredge, 2 August 1970. R.N. NIS.57.7.

Description. All the specimens are encrusting. COR.109, COR.118, COR.177, COR.150, PTR.D.6b, GAR.39: yellow, diactines strongylote. TRI.169: light brown, diactines strongylote to oxeote. PF.24: red (C.C.166), diactines oxeote. NIS.68.1: diactines strongylote to oxeote (rarely). NIS.83.45, NIS.83.10: diactines strongylote. NIS.57.7: diactines oxeote.

Bubaris carcisis Vacelet

Bubaris carcisis Vacelet, 1969: 180

Occurrence. Off Calvi, depth 117 m, 15 July 1969. R.N. NIS.82.20.

Description. (Figg. 45, 46) The specimen is erect on an encrusting base, cylindrical, tapering at the distal end, 25 mm long, about 1 mm thick.

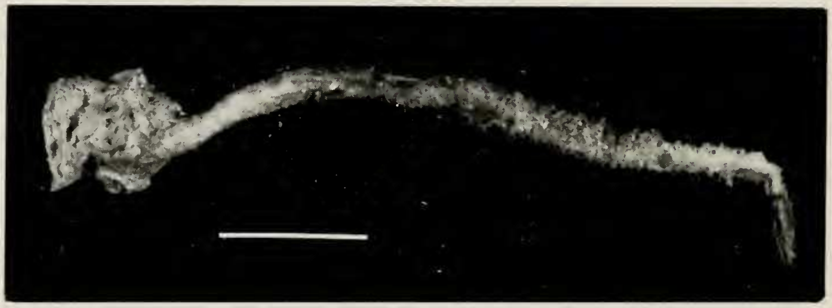

Fig. 45 - *Bubaris carcisis*, specimen NIS.82.20. Scale: 0.5 cm.

Remarks. The spiculation agrees with Vacelet's description. It may only be observed that the smaller styles are a little more pronouncedly curved near the base.

Bubaris subtyla sp. n.

Occurrence. Off Calvi, depth 120-147 m, detrital, dredge, 15 July 1969. R.N. NIS.83.5, NIS.76.14.

Off Calvi, depth 121-149 m, detrital, dredge, 14 July 1969. R.N. NIS.81.12.

Holotype (a spicule slide of NIS.76.14). MSNG 47169.

Description. (Fig. 47) NIS.83.5 is a fragment measuring about 5 mm, consisting of four rounded lobes, hispid. NIS.81.12 is a cylindrical, T-shaped fragment measuring also about 5 mm, hispid. NIS.76.14 is a tangled mass, 6 mm across, of very hispid branches about 1 mm thick. The specimens have been entirely used for preparations.

Spicules. 1) Styles to subtylostyles measuring 125 x 5.4 µm to 1600 x 23 µm, all intermediate sizes being represented. While the larger ones are pure styles, the smaller ones – say from 350 μm down – tend to basal tylotism, a character which becomes more conspicuous as the size diminishes. 2) Tortuous diactines measuring 80-240 x 5.4-7 μm, strongylote, often anisodiametric, with one or both extremities attenuated.

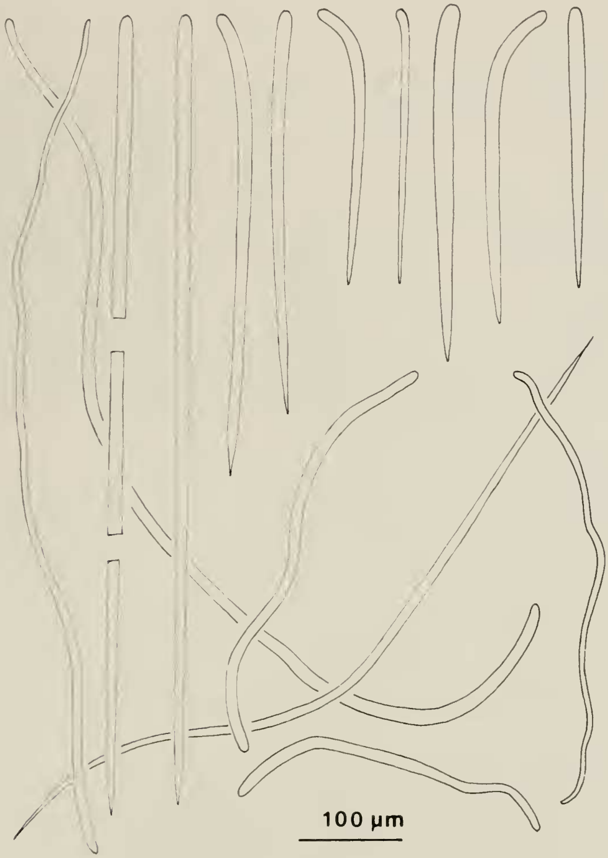

Fig. 46 - Spicules of *Bubaris carcisis*.

Remarks. This species is mainly characterized by the small size reached by its styles and their modification to subtylostyles. The spiculation is the same in the three specimens, which come from different dredgings.

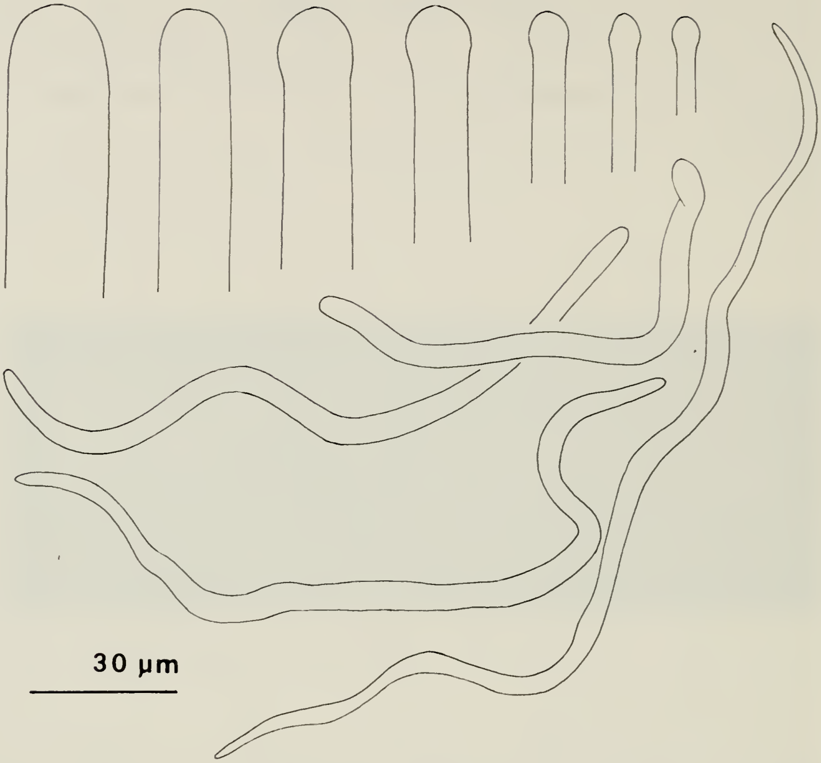

Fig. 47 - Spicules of *Bubaris subtyla* sp. n.

Monocrepidium vermiculatum Topsent

Monocrepidium vermiculatum Topsent, 1898: 229

Occurrence. Off Calvi, depth 121-149 m, 14 July 1969. R.N. NIS.81.4.

Description. Characteristic spicules present in a preparation.

Rhabdobaris gen. n.

Diagnosis. Bubaridae stipitate, possessing styles, oxeas, acanthostrongyles and raphides.

Type species: *Rhabdobaris implicata* sp. n.

Remarks. This genus appears rather nearly related to *Rhabdoploca* Topsent (1904: 157) and to *Bubaropsis* Lévi & Vacelet (1958: 235).

Rhabdobaris implicata gen. n., sp. n.

Occurrence. Off Calvi, depth 121-149 m, detrital, dredge, 14 July 1969. R.N. NIS.81.6.

Holotype (a spicule slide). MSNG 47170.

Description. (Fig. 48) The specimen is stipitate, on narrow base of attachment, irregularly flattened, 18 mm high, 2 mm in maximum diameter, slightly hispid. It has been entirely used for preparations.

Spicules. 1) Styles 115-500 x 6.5-11.5 μm. The larger ones are moderately curved near the base, smooth. The smaller ones tend to be more markedly curved (rhabdostyles) and are generally faintly and sparsely spined. A few show a more conspicuous and dense spination. 2) Oxeas 250-360 x 7-12 μm. They are evenly or irregularly curved, or sinuous, sometimes centrotylote. They often verge toward a strongylote form. Often sparse minute spines are present, more concentrated

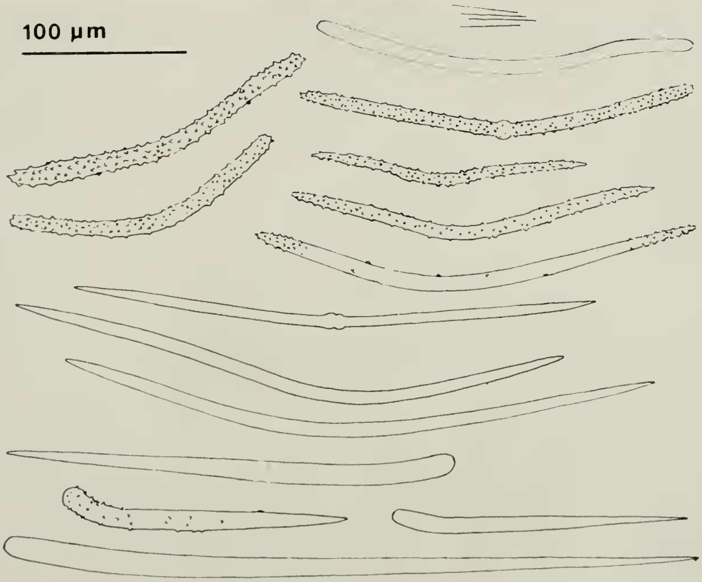

Fig. 48 - Spicules of *Rhabdobaris implicata* gen. n., sp. n.

at the extremities. 3) Acanthostrongyles 140-280 x 6.5-11.5 μm, variously curved, sometimes centrotylote. Some smooth, sinuous strongyles are present. 4) Raphides 20-27 μm, straight, very thin.

There are no intermediate forms between the spined styles and the acanthostrongyles. But all degrees of modification are present between the latter and the oxeas.

DESMOXYIDAE

Halicnemia patera Bowerbank

Halicnemia patera Bowerbank, 1864: 184

Occurrence. Portofino, Lighthouse, depth 6 m, detrital, diver, 18 August 1965. R.N. PF.57.

Description. The specimen is encrusting on a pebble, thin, soft, mucous. The surface is smooth, the colour orange (C.C. 196).

Spicules. 1) Tylostyles up to 1400 μm. They are rare in the preparations; no thickened and shortened ones are present. 2) Oxeas up to 920 μm, centrotylote (the tyle may be eccentric). 3) Microacanthoxeas curved or centrangulated, 65-115 μm.

HEMIASTERELLIDAE

Stelligera stuposa (Ellis & Solander)

Spongia stuposa Ellis & Solander, 1786: 186

Occurrence. Banc du Magaud, depth 140-160 m, 19 September 1969, 5 May 1970. R.N. NIS.86.2, NIS.86.23, NIS.84.7.

Description. The three specimens were erect on a restricted base, hispid, 3 to 10 mm high.

Spicules. 1) Styles measuring up to 2400 x 18 μm. Their base is regular, without swellings. 2) Oxeas measuring up to 860 x 8 μm. They may be straight, curved or sometimes bent, also asymmetrically. 3) Oxyasters with a diameter of 13-24 μm. Their centrum is smaller than in VACELET's specimens (1969: 168).

RASPAILIIDAE

Endectyon delaubenfelsi Burton

Endectyon delaubenfelsi Burton, 1930: 492

Occurrence. Portofino, Olivetta, depth 20-30 m, detrital, diver, 15 October 1962. R.N. PF.363.

Description. (Fig. 49) The specimen consists of two stems joined at the base, successively ramifying. The stems are about 4 mm in diameter; the numerous branches, rather flattened, are 3-4 mm thick, often anastomosing. The surface is minutely hispid. The consistency is resilient and very flexible. The specimen is about 15 cm high; the colour in life was orange-yellow (c.c.246, more intense).

Spicules. 1) Styles of the main skeleton measuring up to 220 x 6 µm. 2) Styles of the main skeleton close to the base of attachment up to 270 x 11 µm. They are faintly, asymmetrically tylote. 3) Styles hispidating measuring less than 1000 µm. 4) Acanthostyles measuring 120-150 µm. They have few and feeble spines, and are very rare even at the base of the stem.

Remarks. In aspect and spiculation this specimen agrees closely with those I described from the Bay of Naples (1978: 42). Abnormal growths as figured by Burton (1930: Fig. 1, B, C, D) often occur, but they do not seem to suggest the way the acanthostyles have originated. A few styles with regular smooth base and a few feeble spines do, however, appear as a transition to the typical acanthostyle.

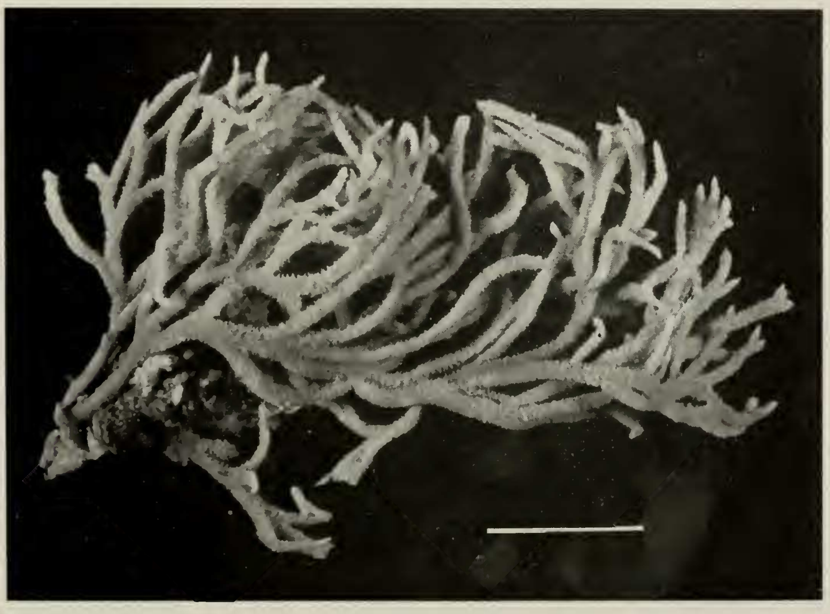

Fig. 49 - *Endectyon delaubenfelsi*, specimen PF.363. Scale: 3 cm.

Raspailia virgultosa (Bowerbank)

Dictyocylindrus virgultosus Bowerbank, 1866: 113

Occurrence. Off Calvi, depth 139-142 m, detrital, dredge, 16 July 1969. R.N. NIS.70.7.

Description. The specimen is 1 cm long, 1 mm thick at the base, tapering toward the distal end. In the dry state, it is flexible, off-white, with long hispidation.

Spicules. 1) Styles to subtylostyles slightly curved, measuring 1600-1800 x 16 µm. 2) Acanthostyles very abundant, straight or slightly curved, measuring from 70 x 5 µm to 540 x 11 µm. The base is more or less tylote, with often eccentric tyle. The spines are scarcely developed. 3) Anisoxeas (tornotoxeas or strongyloxeas) feebly curved, very abundant, measuring 550-650 x 6-7 µm.

Remarks. This species was hitherto known only from the northeastern Atlantic.

Raspailia gracillima Topsent

Raspailia gracillima Topsent, 1894c: 38

Occurrence. Banc du Magaud, depth 100 m, detrital, dredge, 19 September 1969. R.N. NIS.66.1.

Description. The specimen consists of an isodiametric cylinder without recognizable base of attachment, 7 cm long and about 1 mm thick, flexible in spirit, light brown, hispid.

Spicules. 1) Styles slightly curved, measuring 1000-2000 x 8-16 µm. Their base may be attenuated. 2) Acanthostyles with slightly tylote base, spines scarcely developed, measuring 75-105 x 5-8 µm, not abundant. 3) Ectosomal oxeas to strongyloxeas generally straight, measuring 400-500 x 3 µm.

Raspaciona aculeata (Johnston)

Halichondria aculeata Johnston, 1842: 131

Occurrence. Riva Trigoso, depth 30-33 m, boulders, diver, 30 October 1970. R.N. PF.165, PF.166, PF.191, PF.192, PF.274.

Bogliasco, depth 7-15 m, rocks, diver, 11 November 1970. R.N. PF.240, PF.252, PF.254.

Gargano, Baia di Campi, depth 2-10 m, rocks and mud, diver, 4 October 1967. R.N. GAR.13, GAR.14.

Porto Tricase, depth 30 m, conglomerates, dredge, 24 September 1970. R.N. TRI.183.

Castro Marina, depth 25-35 m, conglomerates, dredge, 2 February 1968. R.N. TRI.63.

Torre a Mare, depth 12-30 m, conglomerates, diver, 25 September 1967-30 September 1970. R.N. COR.18, COR.144, COR.189, COR.190, COR.195.

Bari, depth 21 m, conglomerates, dredge, 25 October 1967. R.N. COR.49.

Barletta, depth 15 m, conglomerates, dredge, 24 October 1967. R.N. COR.52.

Bari, depth 15-20 m, conglomerates, dredge, 15 March 1969-23 June 1970. R.N. COR.75, COR.173.

EURYPONIDAE

Eurypon major Sarà & Siribelli

Eurypon major Sarà & Siribelli, 1960: 60

Occurrence. Recco, depth 14-20 m, conglomerates, diver, August 1970. R.N. PF.281.

Torre a Mare, depth 15 m, conglomerates, diver, 30 September 1970. R.N. COR.192.

Description. The specimens are thin encrustations, red, hispid.

Spicules. PF.281: 1) Tylostyles about 2200 x 15 µm. 2) Acanthostyles 80-150 x 2.7-6.7 µm. 3) Ectosomal oxeas 430-490 x 2-3 µm.

COR.192: 1) Tylostyles more than 1600 µm long, about 16 µm thick. 2) Acanthostyles 85-220 x 4-8 µm. 3) Ectosomal oxeas 480-700 x 4-6.7 µm.

Remarks. The ectosomal spicules are pure oxeas, closely agreeing with those observable in the holotype.

Eurypon topsenti sp. n.

Eurypon coronula: Topsent, 1936: 66 (not *Hymeraphia coronula* Bowerbank, 1874: 246)

Occurrence. Porto Tricase, depth 60 m, detrital, dredge, 24 September 1970. R.N. TRI.230.

Riva Trigoso, Punta Manara, depth 33 m, boulders, diver, 30 October 1970. R.N. PF.170.

Holotype (TRI.230, a spicule slide). MSNG 47171.

Description. (Fig. 50) TRI.230: a small and thin encrustation, hispid, red. PF.170: a small and thin encrustation, hispid, mucous, orange to brick-red. Both specimens have been entirely used for spicule preparations.

Spicules. TRI.230: 1) Subtylostyles slightly curved, measuring 1900-2500 x 12-14 µm. 2) Styles to subtylostyles straight or slightly

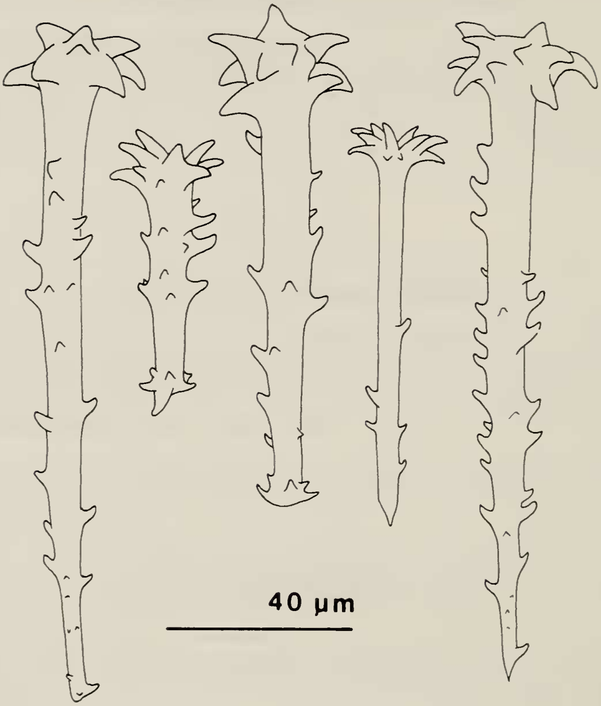

Fig. 50 - Acanthostyles of *Eurypon topsenti* sp. n.

curved, measuring 350-600 x 10.5-17.5 μm. 3) Acanthostyles with characteristically spined base, measuring 55-160 x 3-11 μm (spines not included). The spined crown of the base may reach 33 μm in diameter. 4) Ectosomal styles generally flexuous, measuring 370-430 x 1.5 μm.

PF.170: Only a few broken styles (subtylostyles) of the first category are present on the slide. They may be indicated as being more than 1700 μm long and about 20 μm thick. Styles (subtylostyles) of the second category are abundant, measuring 340-570 x 7-12 μm. The acanthostyles measure 70-162 x 2.7-11 μm; their basal crown may reach 35 μm in diameter. Only few and broken ectosomal spicules are observable; their thickness does not exceed 1 μm.

Remarks. The well-characterized acanthostyles of these specimens, perfectly agreeing with those figured by TOPSENT (1936: 67), are not the same as those figured by BOWERBANK (1874: 246) for *Hymeraphia* (= *Eurypon*) *coronula*. Topsent's specimens appear to belong to a distinct species, for which the name *topsenti* is here proposed.

RHABDEREMIIDAE

Rhabderemia minutula (Carter)

Microciona minutula Carter, 1876: Pl. XVI
Microciona pusilla Carter, 1876: 239

Occurrence. Tremiti Islands, S. Domino, Cala Tonda, depth 2-4 m, superficial cave, diver, July 1966. R.N. PTR.D.5.

Description. (Fig. 51) The specimen is cushion-shaped, measuring 40 x 20 x 4.5 mm. On the upper side there are two or three roundish depressions 7-8 mm in diameter and about 4 mm deep. The surface appears granulated. Preserved in spirit, the specimen is fleshy, rather elastic, buff coloured.

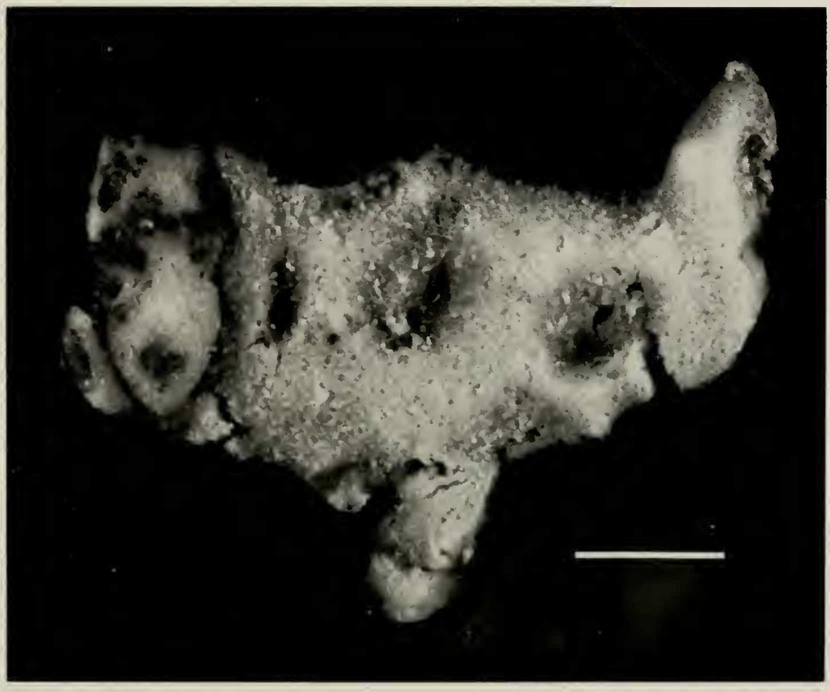

Fig. 51 - *Rhabderemia minutula*, specimen PTR.D.5. Scale: 1 cm.

Spicules. 1) Rhabdostyles measuring 150-240 x 5.5-9.5 μm. 2) Microstyles rough, slightly curved near the base, measuring 40-50 μm by about 1.5 μm. 3) Sigmaspires with a chord of 5-8 μm.

Remarks. Specimens from this locality have been assigned to *Rhabderemia indica* by SARA' (1961: 44) on the basis of spicule sizes. These, however, show a wide range of variability in the recorded specimens of *R. minutula*, from which *R. indica* seems hardly separable specifically.

AGELASIDAE

Agelas oroides (Schmidt)

Clathria oroides Schmidt, 1864: 35

Occurrence. Portofino, Olivetta, depth 3-4 m, rocky shore, diver, 19-22 June 1965. R.N. PF.41, PF.47, PF.48, PF.49.

Portofino, Altare, depth 40 m, rocky slope, trammel, 21 June 1965. R.N. PF.45.

Portofino, S. Fruttuoso, depth 10 m, overhang, diver, 25 September 1964. R.N. PF.51.

Portofino, Vessinaro, depth 30-50 m, rocky slope, trammel, 3 November 1963. R.N. PF.155.

Portofino, Aurora, depth 20-30 m, detrital, diver, 15 October 1962. R.N. PF.5, PF.370.

Leuca E., depth 2-6 m, superficial cave, diver, 22 September 1966. R.N. SAL.217.

Giannutri, Spalmatoi, depth 3-6 m, superficial cave, diver, September 1962. R.N. 511.

Argentario, Porto Ercole, depth 5 m, rocky slope, diver, September 1962. R.N. 525.

Tremiti Islands, S. Domino, Cala Diamante, depth 1-2 m, superficial cave, diver, 5 July 1966. R.N. PTR.C.14.

Tremiti Islands, S. Domino, Cala Tonda, depth 2-5 m, superficial cave, diver, July 1966. R.N. PTR.D.8.

Tremiti Islands, S. Nicola, depth 3-15 m, rocky slope, diver, 21 July 1968. R.N. PTR.G.5.

Dubrovnik, depth 30 m, detrital, dredge, 16 July 1967. R.N. DUB.11.

Crete, Agio Nicolaos, depth 1 m, superficial cavity, 22 September 1969. R.N. CRT.39.

Gargano, Baia di Campi, depth 2-5 m, rocks and mud, diver, 15-21 September 1971. R.N. GAR.54.

Zinzulusa Bay, depth 2-5 m, rocky shore, diver, 8 July 1967. R.N. SAL.243.

Panarea, depth 1-4 m, rocky shore, diver, 15 August 1971. R.N. PAN.33.

Ponza, depth 1-3 m, superficial cave, diver, 5 July 1969. R.N. PZ.15.

Capraia, depth 10-20 m, boulders, diver, 24 September 1964. R.N. CPR.6.

Torre a Mare, depth 12-15 m, conglomerates, diver, 25-27 September 1967. R.N. COR.9.

Porto Tricase, depth 23 m, conglomerates, diver, 18 October 1967. R.N. TRI.19.

Between Cap Ferrat and Cap d'Ail, depth 76 m, dredge, 15 September 1971. R.N. NIS.65.8.

Castellabate, Punta Pagliarolo, depth 10 m, rock, diver, 29 July 1971. R.N. CAB.48, CAB.24, CAB.16.

La Spezia, Torre Scuola, depth 2-4 m, rocks and mud, diver, 5 August 1966. R.N. SP.3.

MERLIIDA

MERLIIDAE

Merlia normani Kirkpatrick

Merlia normani Kirkpatrick, 1908: 510

Occurrence. Castro Marina, depth 1-5 m, rocky shore, diver, 8 July 1967. R.N. ZZ.35.

Ponza, depth 0-0.5 m, superficial cave, 5 July 1969. R.N. PZ.1, PZ.4, PZ.23.

Crete, Agio Nicolaos, depth 0.5-1 m, superficial cave, 22 September 1969. R.N. CRT.42.

Dubrovnik, depth unknown, dredge, 16 July 1967. R.N. DUB.13.

Description. All the specimens were very small encrustations, entirely used for rather unsatisfactory spicule preparations.

ZZ.35: a very hard encrustation, yellow (C.C.246), tylostyles 128-151 x 1.5-2 μm, clavidiscs 40-56 μm (mean 48 μm).

PZ.1: orange, tylostyles 140-173 x 1.5-2 μm, clavidiscs 29-41 μm (mean 33 μm).

PZ.4: brown, tylostyles 122-136 x 1.5-2 μm, clavidiscs 59-78 μm (mean 70 μm).

PZ.23: underneath a *Reniera cratera*, yellow, tylostyles 133-148 x 1.5-2 μm, clavidiscs 37-41 μm (mean 40 μm), raphides straight, oxeote, 44-56 μm.

CRT.42: encrusting on *Arca noae*, tylostyles 128-155 x 1.5-2 μm, clavidiscs 59-78 μm (mean 70 μm), raphides straight, oxeote, sometimes centrotylote, 50-55 μm. A distinct type of raphide is also present: 70-90 μm long, extremely thin, not quite straight.

DUB.13: clavidiscs in a preparation, 63-78 μm (mean 70 μm).

Remarks. VACELET (1980: 227) has proposed a new species *deficiens* for specimens of *Merlia* devoid of calcareous skeleton. With the exception of ZZ.35, which, according to the noted hard consistency may be presumed to possess one, it is unfortunately not known whether it was present or absent in the other specimens here reported. Vacelet also observed that, while the spicules of the two species are fundamentally the same, they are slightly larger in *M. deficiens*, the clavidiscs of the latter measuring in average 56.7/69.2 μm as against 38.6/34.3 μm in *M. normani*. It would follow that, of these specimens, PZ.4, CRT.42 and DUB.13 might belong to *M. deficiens*. If this is the case, it is remarkable that PZ.4 should have been collected, together with PZ.1 and PZ.23, in the same very restricted area.

CERACTINOMORPHA

HALICHONDRIDA

HALICHONDRIIDAE

Halichondria contorta (Sarà)

Topsentia contorta Sarà, 1961: 42

Occurrence. Tremiti Islands, S. Domino, Cala Tonda, depth 1-2 m, superficial cave, diver, July 1966. R.N. PTR.D.4, PTR.D.15.

Tremiti Islands, Caprara, Cala Sorrentino, depth 2-3 m, superficial cave, diver, July 1966. R.N. PTR.E.6, PTR.E.8, PTR.E.18.

Dubrovnik, depth 2-5 m, rocky shore, diver, 16 July 1967. R.N. DUB.7.

Ponza, depth 2-5 m, superficial cave, diver, 5 July 1969. R.N. PZ.25.

Bogliasco, depth 30 m, boulders, diver, 11 November 1970. R.N. PF.219.

Torre Incine, depth 6-15 m, underwater cave, diver, 8 July 1968. R.N. TI.2.

Off Camogli, depth (presumed) 50 m, detrital, trawl, October 1962. R.N. PF.307.

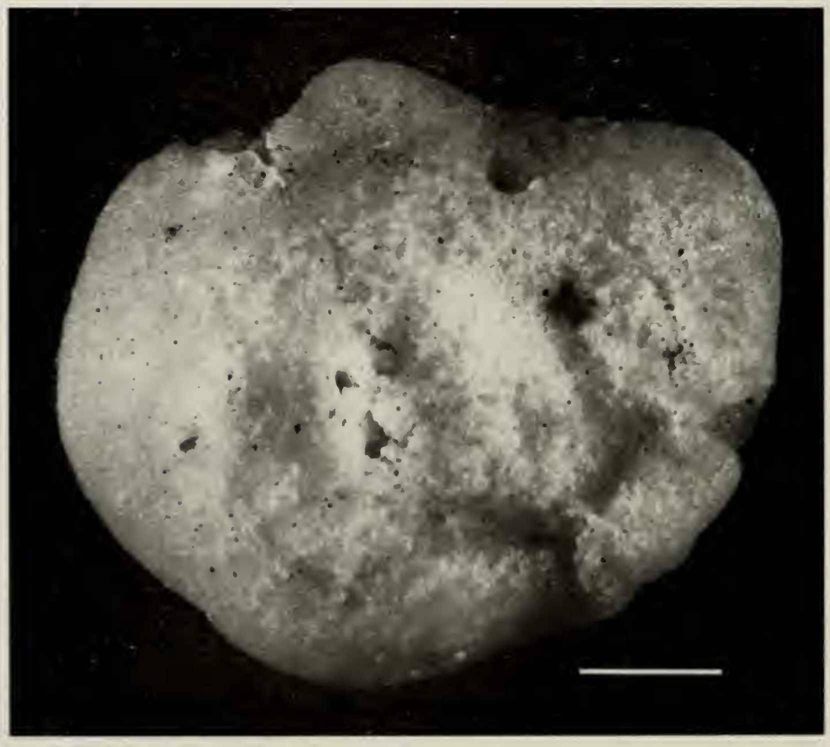

Fig. 52 - *Halichondria contorta*, specimen TI.2. Scale: 1 cm.

Description. (Fig. 52) PTR.D.4: hemispherical, diameter 4 cm. In spirit: firm, friable, white.

PTR.D.15: cushion-shaped, 3 cm wide. Dry: friable, white.

PTR.E.6: irregularly cushion-shaped, 3 cm wide, 1.5 cm thick. In spirit: firm, friable, greyish white, microscopically hispid. Conspicuous oscules 2-3 mm wide, with elevated rim noted in the live specimen.

PTR.E.8: massive, irregular, about 2 cm in diameter. In spirit: firm, friable, greyish white.

PTR.E.18: cushion-shaped, 3 cm wide, 1.5 cm thick. In spirit: firm, friable, cream-white, oscules sparse 3 mm wide.

DUB.7: hemispherical, diameter 2.5 cm. Dry: incompressible, microscopically hispid, with a single oscule on top 2 mm wide, with conspicuously elevated rim, cream coloured.

PZ.25: cushion-shaped, 2 cm in diameter. Dry: incompressible, a few oscules less than 1 mm wide on top, cream coloured.

PF.307: massive, irregularly globular with narrow base of attachment, diameter 3 cm. Dry: hard, light brown.

TI.2: cushion shaped, 5 cm wide, 2.5 cm thick. In life: firm, almost hard, fragile, rough to the touch, not mucous. Oscules with elevated rim. Whitish. In spirit: firm, fragile, greyish white.

The pores are about 300 μm wide. The skeleton is halichondroid, with no ectosomal differentiation.

Spicules. Oxeas variable, 300-800 x 8-23 μm, never straight, but curved, irregularly curved or contort. In some specimens the latter may be unfrequent.

Halichondria aurantiaca (Schmidt)

Reniera aurantiaca Schmidt, 1864: 38

Occurrence. Porto Tricase, depth 60 m, detrital, trammel, 24 September 1970. R.N. TRI.255.

Portofino, Aurora, depth 20-30 m, rock, diver, October 1962. R.N. PF.117.

Description. TRI.255: now in the dry state, was cream-yellow in life. It measures 9 x 3 mm.

Spicules. Oxeas moderately curved or slightly bent, with well-formed points, measuring 550-950 x 9-22 μm.

PF.117: cushion-shaped, measuring 7 x 5 x 2 cm. Preserved in spirit, its consistency is rather firm but fragile, the colour a very light orange (c.c.199). The colour in life was apricot (c.c.212).

Spicules. Oxeas moderately curved to straight, points well formed, 430-700 x 6-11 µm.

Remarks. Notable differences in the thickness of the oxeas were also observed in the specimens I recorded from Naples (1978: 66).

Rhaphisia spelaea sp. n.

Occurrence. Tremiti Islands, Caprara, Cala Sorrentino, depth 2-3 m, superficial cave, diver, July 1966. R.N. PTR.E.12, PTR.E.12bis (several specimens), PTR.E.26.

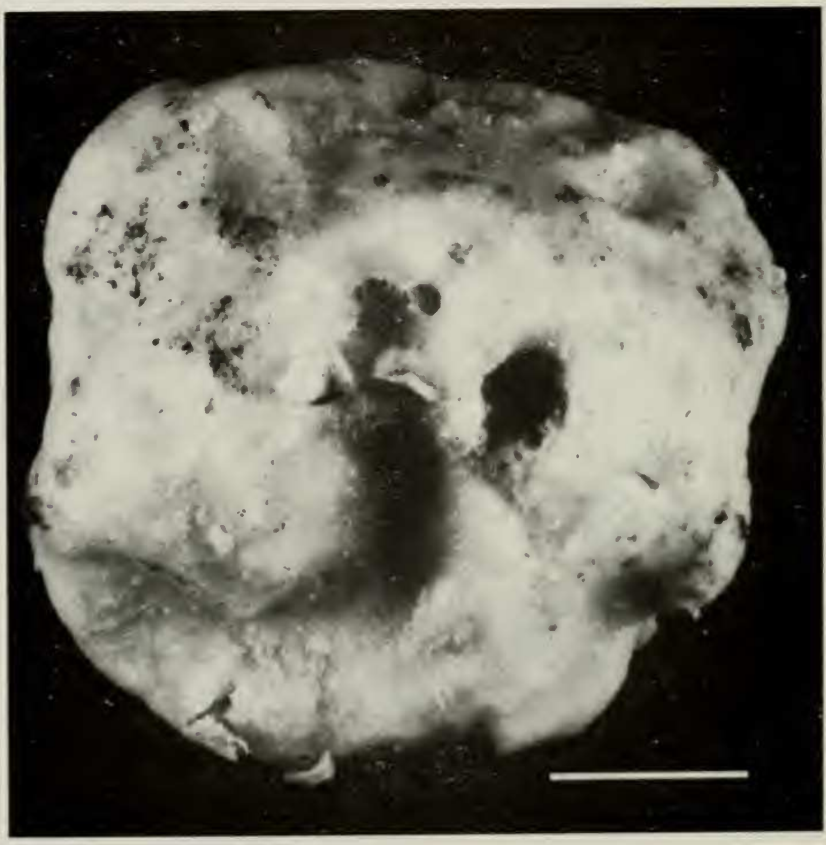

Fig. 53 - *Rhaphisia spelaea* sp. n., the holotype (in spirit). Scale: 1 cm.

Tremiti Islands, S. Domino, Cala Tonda, depth 2-3 m, superficial cave, diver, July 1966. R.N. PTR.D.18.

Massa Lubrense, Cala di Mitigliano, depth 10-12 m, cave, July 1980, coll. Dr. M. Pansini. R.N. CAB.87.

Leuca W., depth 0.6 m, rocky shore, under ledge, 8 July 1967. R.N. SAL.16.

Castro Marina, Zinzulusa Bay, depth 1-5 m, rocky shore, in cavities and under ledges, 8 July 1967. R.N. ZZ.4, ZZ.21, ZZ.34.

Holotype (PTR.E.12). MSNG 47172.

Paratypes (PTR.E.12bis). MSNG 47173.

Description. (Figg. 53, 54) The various specimens have uniform characters: the sponge is recognizable at sight. It is mucous, cushion-shaped, with an irregularly roundish outline, with low depressions and elevations. The size is 3.5 to 6 cm across by a thickness of 1.5 to 2.5 cm (PTR.E.12 measures 4 x 1.5 cm). The consistency is fleshy, moderately firm; the colour, in life and after preservation, is cream. The ectosome is not easily separable. Multiple exhalant vents are scarce and sparse. Pores, sparse or more often in clusters, are about 200 μm in diameter.

The choanosomal skeleton consists of an irregular but rather dense reticulation of ill-defined spicular tracts bound by clear spongin, with meshes about 350 μm wide. These tracts are made by the larger oxeas, one to four in front, not well aligned. Scarce smaller oxeas are scattered. The ectosomal skeleton consists of a thick layer of smaller oxeas densely set in confusion.

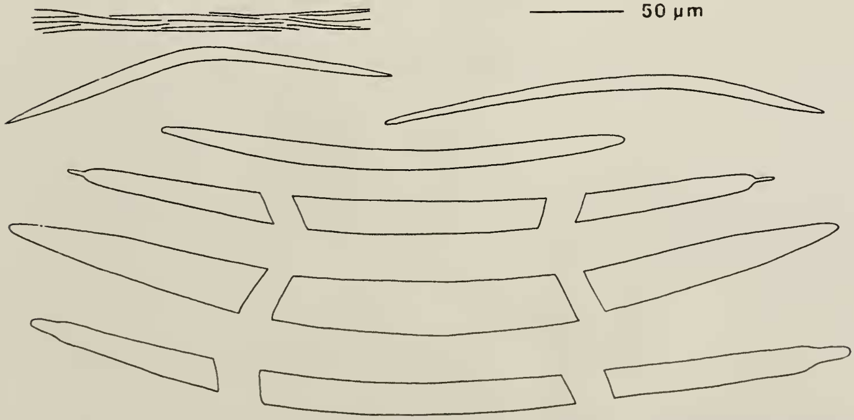

Fig. 54 - Spicules of *Rhaphisia spelaea* sp. n.

Spicules. 1) Oxeas 460-740 x 14-21 µm. They are curved; their points are generally rounded or stepped down or mucronate. Some modifications into styles or strongyles are present. 2) Oxeas 140-280 x 4.5-12 µm. They are generally curved or bent; their points are blunt. 3) Trichodragmata about 200 µm. They may be rare in some specimens.

Spongosorites intricatus (Topsent)

Halichondria intricata Topsent, 1892b: XIX

Occurrence. Bari, S. Spirito, depth 20 m, conglomerates, dredge, 15 March 1969. R.N. COR.74.

Bari, depth 30 m, conglomerates, dredge, 17 June 1970. R.N. COR.116, COR.120.

Porto Tricase, depth 25 m, conglomerates, dredge, 16 November 1967. R.N. TRI.55.

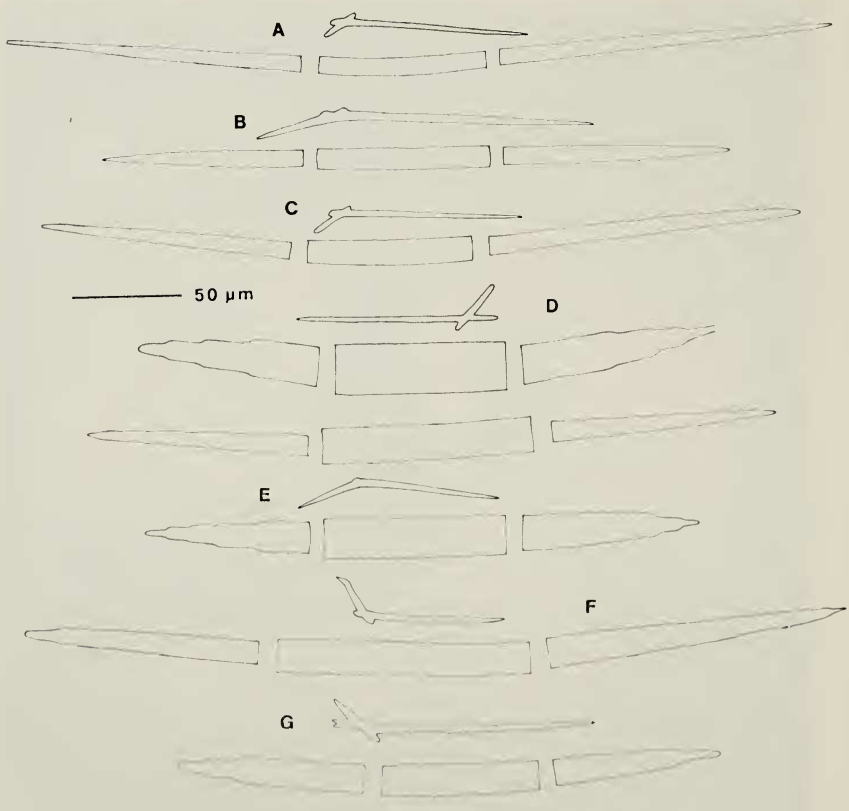

Fig. 55 - *Spongosorites intricatus*. Larger oxeas and malformations. A: COR.116, B: COR.120, C: COR.74, D: TRI.80, E: TRI.152, F: TRI.55, G: TRI.123.

Porto Tricase, depth 25-35 m, conglomerates, dredge, 2 February 1968. R.N. TRI.80.

Porto Tricase, depth 15 m, conglomerates, diver, 22 July 1970. R.N. TRI.123.

Porto Tricase, depth 30 m, conglomerates, diver, 24 September 1970. R.N. TRI.152.

Description. (Fig. 55) All the specimens are very small, encrusting or insinuating in the cavities of the conglomerates. The colour in life was noted as follows: COR.120: yellow; TRI.55, TRI.80, TRI.123: black. COR.74 was black soon after collection. COR.116 (in spirit) is dark brown. The skeleton is halichondroid.

Spicules. Oxeas curved, rarely straight, not divisible in categories. The larger ones reach 750 x 12 μm in the specimens from Bari, 760 x 25 μm in those from Porto Tricase. The smallest ones measure about 60 x 1.5-2 μm. Teratological alterations of the smaller oxeas are present in all the specimens, but not very frequent; they assume a rather uniform, characteristic shape. Centrotylotysm of the smaller oxeas is occasional. The points of the larger oxeas are variable: they may be evenly tapering, or mucronated, or much shortened by successive reductions, in which case the spicule is shorter and thicker.

Remarks. In the various specimens the differences in thickness of the larger oxeas and in the shape of their extremities are remarkable, but appear attributable to intraspecific variability.

The sponge from Algeria described by TOPSENT (1901: 347) as *Topsentia glabra* appears conspecific with the present material.

Spongosorites flavens sp. n.

Occurrence. Tremiti Islands, S. Domino, Grotta delle Viole, depth 6 m, superficial cave, diver, 23 July 1968. R.N. PTR.H.26, PTR.H.39.

Tremiti Islands, Caprara, Cala Sorrentino, depth 2-3 m, superficial cave, diver, 5 July 1966. R.N. PTR.E.24.

Tremiti Islands, S. Domino, Punta Diamante, depth 2-4 m, superficial cave, diver, 5 July 1966. R.N. PTR.C.16.

Dubrovnik, depth 30 m, detrital, dredge, 16 July 1967. R.N. DUB.15.

Ponza, depth 2-5 m, superficial cave, diver, 5 July 1959. R.N. PZ.16.

Castellabate, depth 10 m, rock, diver, 27 July 1971. R.N. CAB.11.

Portofino, S. Fruttuoso, depth 12 m, rock, diver, 25 September 1964. R.N. PF.79.

Castro Marina, Zinzulusa Bay, depth 3-5 m, rocky shore, diver, 8 July 1967. R.N.ZZ.37b.

Holotype (PTR.H.26). MSNG 47174.

Description. (Figg. 56, 57) The sponge is cushion-shaped to massive, fleshy but fragile both in life and preserved in formalin or

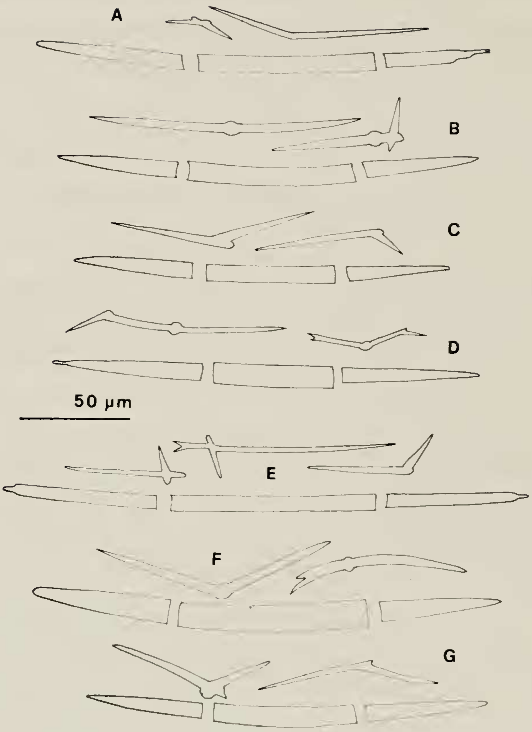

Fig. 56 - *Spongosorites flavens* sp. n. Larger oxeas and malformations. A: CAB.11bis B: PTR.H.26, C: PTR.C.16bis, D: PTR.H.39, E: PF.79b, F: DUB.15b, G: PTR.E.24.

spirit. The largest specimen observed was 15 x 8 x 4 cm; the holotype measures 7 x 6 x 4 cm. The surface is smooth, the ectosome is not separable, oscules have not been recognized. The colour in life was sulfur-yellow to orange-yellow (C.C.246 noted for the holotype, C.C.263 for ZZ.37b). A living specimen, when cut, may slightly tinge the surrounding water. After preservation, the colour becomes dark brown.

The sponge generally contains a large quantity of debris, and its surface is overgrown in part or entirely by epibionts: seven of these specimens were found covered by *Reniera cratera* Schmidt. Extruded strongyles from the latter are present, often very abundant, in the choanosome of all the specimens available, including the two on which the presence of the *Reniera* was not evident.

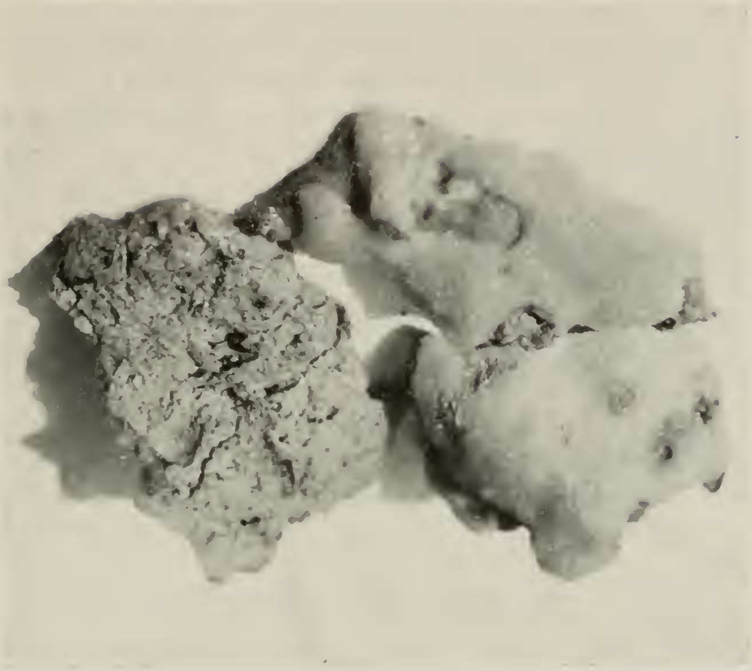

Fig. 57 - Two specimens of *Spongosorites flavens* sp. n. (fresh). x 0.5.

The skeleton is halichondroid, with no ectosomal differentiation.

Spicules. Oxeas not separable in categories, from 60 to 480 μm long (in most specimens they do not exceed 370 μm) and 2 to 9 μm thick. They are slightly curved; their points are subject to modifications. Teratological, characteristic alterations of the smaller spicules are present in all the observed specimens. A slight centrotylotysm in the medium-sized oxeas is frequent.

Remarks. Of the specimens from the Bay of Naples which I recorded (1978: 69) as *Spongosorites intricatus*, PNA.255 and IS.C.2 are to be regarded as belonging to the present species. No foreign strongyles were found among their spicules.

Spongosorites sp.

Occurrence. Between Cap Ferrat and Cap d'Ail, depth 76 m, detrital, dredge, 15 September 1971. R.N. NIS.65.13, NIS.51.3.

Description. (Fig. 58) NIS.65.13 consists of various fragments appearing to belong to a single massive sponge which might have had a diameter of about 10 cm. The colour (in spirit) is black. The consistency is inelastic, friable; the sponge contains a large quantity of sand and debris. Details of the surface are not recognizable. The skeletal structure is halichondroid. Specimen NIS.51.3, dry, consists of small fragments, greyish brown.

Spicules. Oxeas curved, measuring 70-550 x 2-15 µm, not separable in categories. The curvature of the larger ones may be uneven, and some modifications to styles and occasional centrotylotysm are present. Teratological alterations are frequent; they affect the middle-sized spicules, not the smallest ones.

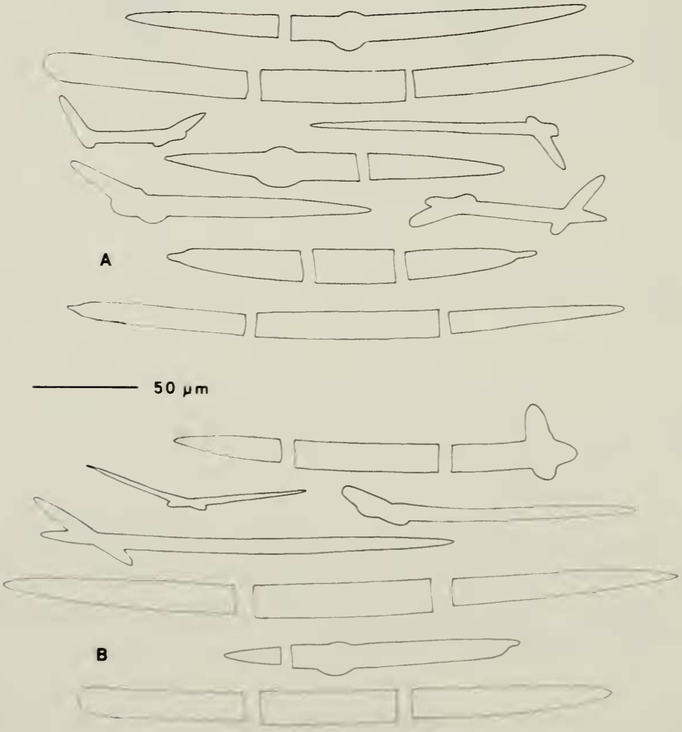

Fig. 58 - *Spongosorites* sp. Larger oxeas and malformations. A: NIS.65.13, B: NIS. 51.3.

HYMENIACIDONIDAE

Dictyonella obtusa (Schmidt)

Acanthella obtusa Schmidt, 1862: 65

Occurrence. Off Calvi, depth 117 m, detrital, dredge, 15 July 1969. R.N. NIS.82.11, NIS.82.28.

Banc du Magaud, depth 140-160 m, detrital, dredge, 19 September 1969. R.N. NIS.86.1.

Description. NIS.82.11 (dry): erect processes from an encrusting base, about 5 mm high, hispid.

NIS.82.28 (dry): erect on short peduncle, foliaceous, hispid, 22 mm high.

NIS.86.1 (dry): foliaceous, 15 mm high.

Spicules. Styles more or less evenly curved, sometimes slightly flexuous, measuring 1500-2600 x 15-29 μm. The base is evenly rounded, the point short.

Dictyonella pelligera (Schmidt)

Clathria pelligera Schmidt, 1864: 34

Occurrence. Ilovik Island, (Losinj), depth 47 m, sand, grab, 25 August 1968. R.N. LI.23.

Gargano, Baia di Campi, depth 5 m, rocks and mud, diver, 4-5 October 1967. R.N. GAR.11.

Description. LI.23: a fragment about 2 x 1 cm, fibrous, pale yellow in spirit, cream in the present dry state, soft and fragile.

GAR.11: encrusting, hispid, bright orange in life.

Spicules. Styles slightly, evenly curved, measuring 490-690 x 4-10 μm. The base is regularly rounded.

Dictyonella marsillii (Topsent)

Stylotella marsillii Topsent, 1893: XLI

Occurrence. Between Cap Ferrat and Cap d'Ail, depth 50 m, detrital, dredge, 18 October 1971. R.N. NIS.50.2.

Description. The specimen (now in the dry state) was apparently growing erect, spreading from a narrow base, 15 mm high.

Spicules. Styles slightly curved, measuring 750-1200 x 6-11.5 μm. The base is regularly rounded off; the point, with few exceptions, is elongated and sharp.

Dictyonella incisa (Schmidt)

Phakellia incisa Schmidt, 1880: 282

Occurrence. Tremiti Islands, S. Domino, Punta Provvidenza, depth 12 m, underwater cave, diver, July 1966. R.N. PTR.F.6.

Tremiti Islands, S. Nicola, depth 10 m, superficial cave, diver, 21 July 1968. R.N. PTR.G.7.

Tremiti Islands, S. Domino, Grotta delle Viole, depth 6 m, superficial cave, diver, 23 July 1968. R.N. PTR.H.2.

Gargano, Baia di Campi, depth 2-10 m, rocks and mud, diver, 4-5 October 1967. R.N. GAR.19.

Castro Marina, depth 25-35 m, conglomerates, dredge, 2 February 1968. R.N. TRI.60.

Porto Tricase, depth 15 m, conglomerates, diver, 22 September 1970. R.N. TRI.118.

Torre a Mare (Bari), depth 12-15 m, conglomerates, diver, 25-27 September 1967. R.N. COR.26.

Bari, depth 30 m, conglomerates, dredge, 30 October 1967. R.N. COR.56.

Castro Marina, Zinzulusa Bay, depth 4-5 m, rock, diver, 8 July 1967. R.N. ZZ.1, ZZ.24.

Argentario, Porto Ercole, depth 10 m, rock, diver, September 1962. R.N. 516.

Leuca E., shallow water, superficial cave, 9 July 1967. R.N. SAL.176.

Riva Trigoso, depth 33 m, rocks and detrital, diver, 30 October 1970. R.N. PF.271.

Portofino, Punta Chiappa, depth 30 m, rock, diver, 12 October 1962. R.N. PF.381, PF.128.

Portofino, Aurora, depth 20-30 m, rock, diver, 15 October 1962. R.N. PF.373, PF.372, PF.116, PF.127.

Description. Cushion-shaped to massive, up to 12 cm in diameter, fleshy, rather soft. The colour in life is orange (C.C.181, 183, 196); it is cream-orange (about C.C.200) after preservation in spirit.

Spicules. Styles moderately curved, sometimes flexuous, measuring 800-1350 x 8-17 μm. An annular swelling near the base is often present. The point is generally abruptly shortened by successive attenuations; it is more evenly elongated in the thinner ones.

Laminospongia gen. n.

Diagnosis. Hymeniacidonidae of laminar form, with a halichondroid skeleton of oxeas to styles variously modified. Type species: *Laminospongia subtilis* sp. n.

Laminospongia subtilis gen. n., sp. n.

Occurrence. Off Calvi, depth 137 m, detrital, trawl, 17 July 1975. R.N. NIS.27.1.

Holotype. MSNG 47175.

Description. (Figg. 59, 59bis) The specimen consists of

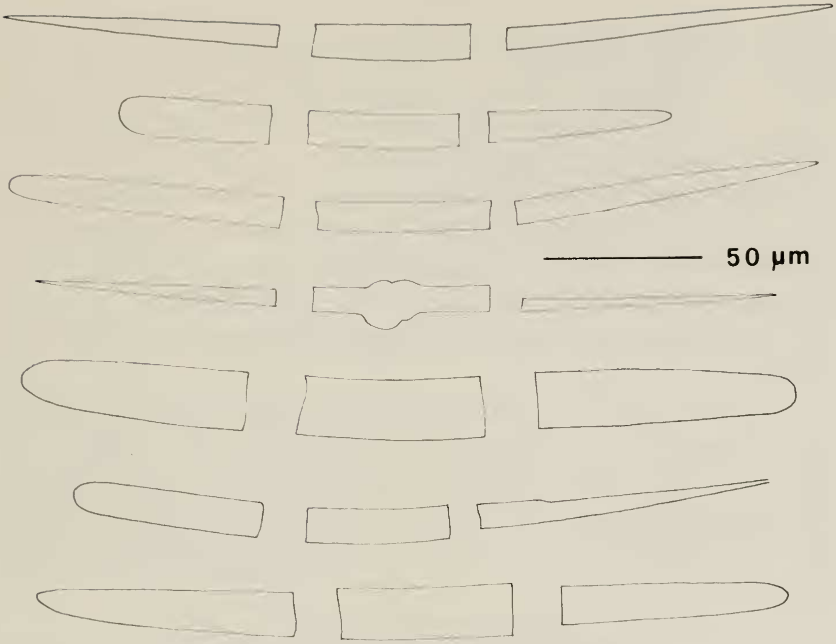

Fig. 59 - Spicules of *Laminospongia subtilis* gen. n., sp. n.

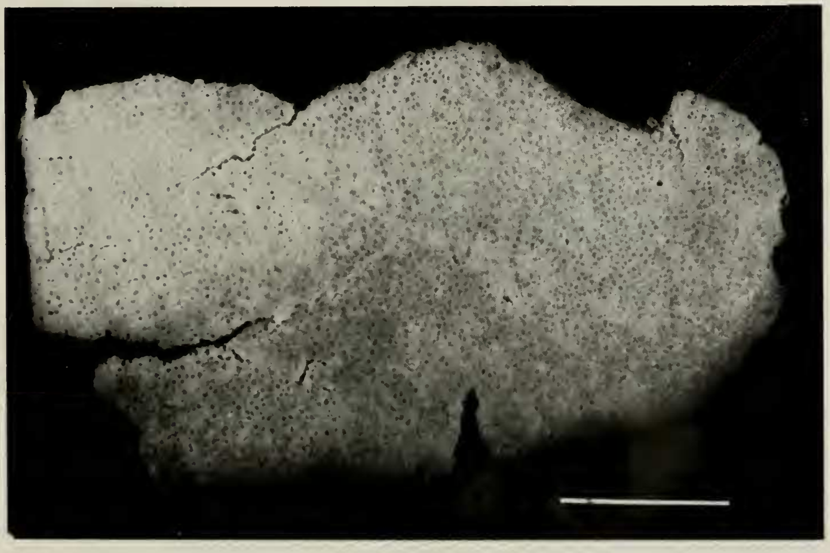

Fig. 59bis - The holotype of *Laminospongia subtilis* gen. n., sp. n. (a fragment, in spirit). Scale: 2 cm.

several fragments apparently belonging to the same individual. The sponge – of which the base of attachment is not available – is laminar, with a maximum thickness of 3 mm, decreasing to 1 mm toward the border. The total surface of the fragments is about 120 cm^2. No difference between the two faces of the lamella is apparent; the surface is smooth and even, perforated by vents 0.2-0.3 mm wide, 0.7-1 mm apart. The ectosome is not separable. In spirit, the colour of the sponge is chamois (C.C.250, lighter). The consistency is firm: the lamella may be moderately flexed, but breaks abruptly if further bent.

The skeletal structure is halichondroid, without ectosomal differentiation.

Spicules. Oxeas to styles, unevenly curved, variously modified and not separable in categories. Pure oxeas, long and comparatively thin, are present, thicker spicules show modifications toward a stylote or strongylote form, pure styles are moderately frequent, pure strongyles rare. Centrotylotysm is occasionally present. The spicules measure 350-1300 x 9-19 µm.

Hymeniacidon sanguinea (Grant)

Spongia sanguinea Grant, 1826b: 135

Occurrence. Leuca W., surface, rocky shore, 8 July 1967. R.N. SAL.23.
Leuca E., surface, cave, 9 July 1967. R.N. SAL.154.
Porto Ercole, Isolotto, surface, rocky shore, 9 September 1963. R.N. 563.

Description. The specimens were yellowish in life; only small fragments are available.

Spicules. Styles curved, sometimes slightly flexuous, faintly fusiform, measuring 170-428 x 5-7.5 µm. Some slight irregular tylote modifications are observable in specimens SAL.23 and SAL.154.

Hemimycale columella (Bowerbank)

Desmacidon columella Bowerbank, 1874: 241

Occurrence. Porto Tricase, depth 15 m, conglomerates, dredge, 22-24 September 1970. R.N. TRI.110, TRI.200.
Porto Ercole, depth 8 m, rock, diver, September 1962. R.N. 514.
S. Caterina, shallow water, rocky shore, 7 July 1967. R.N. SAL.11.
Leuca E., shallow water, rocky shore, 8 July 1967. R.N. SAL.35.
Leuca W., shallow water, rocky shore, 10 July 1967. R.N. SAL.97.
Leuca W., shallow water, superficial cave, 10 July 1967. R.N. SAL.136, SAL.138.
Panarea, depth 1-2 m, rock, 15 August 1971. R.N. PAN.42.
Portofino, Vessinaro, depth 50 m, trammel, 11 April 1965. R.N. PF.25.
Portofino, Altare, depth 60 m, trammel, 8 November 1965. R.N. PF.77.

Description. PF.77 is encrusting on a dead bivalve, giving off numerous irregular processes up to 15 mm long, partly coalescing. Its colour in life was pale orange (C.C.194), it is presently (in spirit) middle brown. The consistency is fleshy, compressible.

PF.25 is recorded in the field notes as massive, soft, the ectosome light yellowish, areolate, the choanosome bright light brown.

All the other specimens are small fragments.

Spicules. TRI.110, TRI.200, SAL.136, SAL.138: subtylostrongyles, 260-380 x 2.5-5.5 µm.

SAL.11, SAL.35, SAL.97: anisostrongyles to subtylostrongyles, 280-360 x 2.5-4.5.

PAN.42: styles with short, ill-formed point, 270-380 x 2.5-5 µm.

PF.25: strongyles with frequent modifications: anisostrongyles, subtylostrongyles, subtylotornotes, subtylostyles, 340-430 x 2.5-5.5 µm.

PF.77: strongyles for the most part pure, straight, with few stylote modifications, 350-453 x 4-6 µm.

Ulosa stuposa (Esper)

Spongia stuposa Esper, 1794: Pl. 5

Occurrence. Porto Ercole, Isolotto, surface, rocky shore, 9 September 1963. R.N. 554.

Description. Several fragments are available, cushion-shaped, on *Balanus perforatus* Bruguière. In life the sponge was soft, elastic, light dull-yellow. Preserved, it is partly macerated, elastic, whitish.

The skeleton consists of a reticulation of spongin fibres 17-55 µm thick, forming irregular meshes 180-500 µm wide. The fibres are cored by thickly-set styles, the spongin is clear, abundant, overlapping.

Spicules. Styles slightly curved, measuring 120-175 x 2.5-4.5 µm. Some are modified into oxeas of the same size.

Ulosa tenellula sp. n.

Occurrence. S. Caterina, surface, rocky shore, 7 July 1967. R.N. SAL.224.

Holotype. MSNG 47176.

Description. (Fig. 60) The sponge was locally frequent, growing around stems of *Aglaophenia octodonta* (Heller), among algae

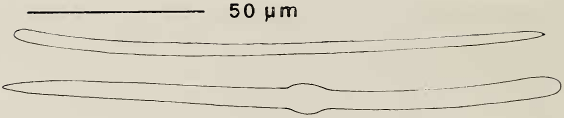

Fig. 60 - Spicules of *Ulosa tenellula* sp. n.

of the genus *Cystoseira.* It was very soft, conulose, bright light orange. Preserved in spirit, it has now a mushy consistency, slightly resilient; its colour is light dull orange.

The skeleton consists of a network of spiculo-fibres 16-34 μm thick, the main ones directed toward the surface, about 250 μm apart. The meshes are very irregular, 100-500 μm wide. The fibres consist of styles joined by spongin, often aligned with some irregularity. Scattered spicules are also present.

Spicules. Styles slightly curved, measuring 130-160 x 2.6-5.4 μm. About half of them are markedly centrotylote.

Remarks. The main character distinguishing this species from *Ulosa stuposa* is the centrotylotysm of a large part of its styles. Other differentiating features are slight. In *U. tenellula* the skeletal frame is somewhat weaker, the spiculo-fibres being thinner, with scarcer spongin and with spicules less regularly aligned. The surface ends of the fibres are more closely set.

Ulosa tubulata sp. n.

Occurrence. Off Calvi, depth 155 m, detrital, trawl, 18 July 1975. R.N. NIS.69.1.

Holotype. MSNG 47177.

Description. (Figg. 61, 61bis) The sponge appears to result from the coalescing of two individuals, as evidenced by the pre-

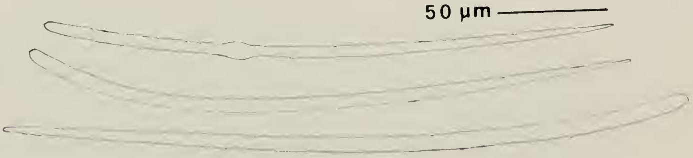

Fig. 61 - Spicules of *Ulosa tubulata* sp. n.

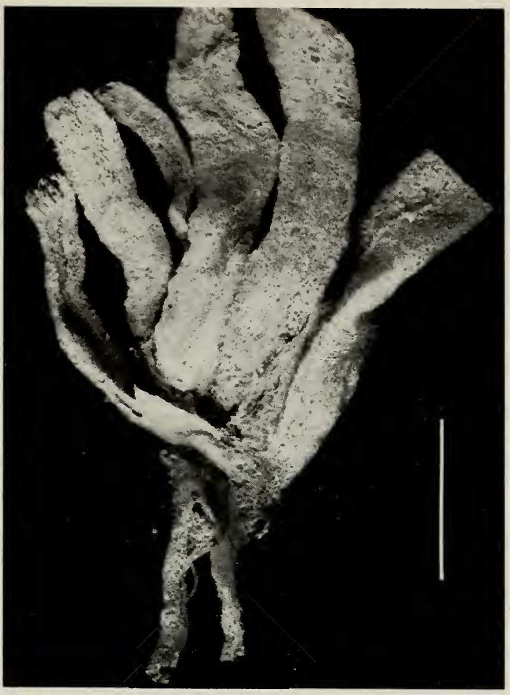

Fig. 61bis - The holotype of *Ulosa tubulata* sp. n. (in spirit). Scale: 3 cm.

sence of two distinct stalks of attachment. The two peduncles are about 1 cm apart, 4-5 mm thick, 3 cm long. The sponge consists of eight erect tubular processes starting from a common base which narrows toward the peduncles. The tubes are from 4 to 7 cm long and from 7 to 17 mm in diameter; the wall is about 1.5 mm thick. The total height of the sponge is 14 cm.

Preserved in spirit, the sponge is extremely soft and weak, not supporting its own weight, the tubes flattened. In the same time, it has sufficient elasticity not to break up if handled with care. The colour is buff; the surface is smooth to the touch but microscopically hispid. The outer surface of the tubes is perforated by closely-set pores 150-300 μm wide.

The skeleton consists of a dense but irregular reticulation of spiculo-fibres having a tortuous course, variously branching and connecting. The fibres may be up to 55 μm thick, containing about ten spicules in front, but more often they are thinner; many connections are made by few ill-arranged spicules or by single ones. The spicules are joined by clear spongin. There is no ectosomal skeletal differentiation.

Spicules. Styles evenly curved at the first third of their length, measuring 255-325 x 5.3-7 μm. Centrotylotysm is moderately frequent.

POECILOSCLERIDA

MYCALIDAE

Mycale contarenii (Martens)

Spongia contarenii Martens, 1824: 455

Occurrence. Taranto, Mar Piccolo, depth 4 m, diver, July 1972. R.N. PC.102.

Description. A small fragment, fleshy, pinkish grey, entirely used for a preparation.

Spicules. 1) Subtylostyles to tylostyles, fusiform, straight or very slightly curved, 270-330 x 8-11 μm. 2) Anisochelas 46 μm. 3) Anisochelas 24 μm. 4) Anisochelas 13 μm. 5) Sigmas C-shaped or contort, 70 x 4 μm, abundant. 6) Sigmas 15-22 μm very thin, extremely rare. 7) Toxas 30-46 μm.

Mycale massa (Schmidt)

Esperia massa Schmidt, 1862: 56

Occurrence. Rovinij, depth 30 m, detrital and mud, dredge, 7 August 1968. R.N. LI.24.

Porto Tricase, depth 25 m, conglomerates, dredge, 16 November 1967. R.N. TRI.38.

Bari, depth 15 m, conglomerates, dredge, 17 June 1970. R.N. COR.105.

Description. The specimens are small and fragmented, cream, soft and fragile in the dry state. TRI.38 was light brown in life, COR.105 yellow.

Spicules. 1) Styles to subtylostyles fusiform, 430-700 x 10-17 μm. The basal swelling, if present, is scarcely conspicuous. 2) Anisochelas 52-67 μm. 3) Anisochelas 31-41 μm. 4) Anisochelas 18-20 μm. 5) Sigmas 40-63 μm. 6) Sigmas 14-25 μm. 7) Trichodragmata 50-55 μm.

Mycale tunicata (Schmidt)

Esperia tunicata Schmidt, 1862: 55

Occurrence. Torre a Mare, depth 30 m, conglomerates, diver, 22 June 1970. R.N. COR.161.

Bogliasco (Genova), depth 30 m, conglomerates, diver, 11 November 1970. R.N. PF.209, PF.218.

Description. All the specimens, very small, have been entirely used for spicule preparations.

Spicules. 1) Subtylostyles to styles, slightly fusiform, straight or slightly curved, measuring 370-470 x 7-11 μm. 2) Anisochelas 48-60 μm. 3) Anisochelas 29-33 μm. 4) Anisochelas 14.5-18.5 μm. The smaller anisochelas are rare or wanting. 5) Trichodragmata about 45 μm.

Mycale rotalis (Bowerbank)

Desmacidon rotalis Bowerbank, 1874: 327

Occurrence. Bari, depth 30 m, conglomerates, dredge, 30 October 1967. R.N. COR.62.

Description. The specimen, concrescent with algae, dark red, has been entirely used for a preparation.

Spicules. 1) Subtylostyles straight, slightly fusiform, 240-310 x 4.5-7 μm. 2) Anisochelas with a chord of 29.5-33.5 μm, abundant. 3) Anisochelas with a chord of 18.5-22.5 μm, abundant. No smaller anisochelas have been observed. 4) Sigmas with a chord of 62-78 μm, abundant. 5) Sigmas with a chord of 22-26 μm, extremely rare.

Mycale lingua (Bowerbank)

Halichondria lingua Bowerbank, 1861: 69

Occurrence. Off Calvi, depth 135 m, detrital, trawl, 18 July 1975. R.N. NIS.12.6, NIS.19.3.

Off Calvi, depth 117-149 m, detrital, dredge, 14-15 July 1969. R.N. NIS.81.10, NIS.82.3.

Description. The available specimens are very small fragments.

Spicules. 1) Styles straight or slightly curved, fusiform, with a narrow base, measuring 460-740 x 11-15 μm. 2) Anisochelas 70-81 μm. 3) Anisochelas 30-40 μm. 4) Anisochelas 16-22 μm. 5) Sigmas 16-35 μm. 6) Trichodragmata about 55 μm.

HAMACANTHIDAE

Hamacantha johnsoni (Bowerbank)

Hymedesmia johnsoni Bowerbank, 1864: 276

Occurrence. Off Calvi, depth 139-142 m, detrital, dredge, 16 July 1969. R.N. NIS.74.2, NIS.74.7.

Description. NIS.74.2 (in spirit) is a very small hyaline encrustation on a polychaete tube. One or two exhalant papillae are discernible. NIS.74.7 (dry) is small, thin, encrusting on agglomerated debris. Its colour is pure white.

The ectosome is a thin, separable membrane supported by tangential thickly-set spicular tracts. The choanosomal skeleton is an irregular reticulation of multispicular tracts.

Spicules. 1) Oxeas slightly curved, measuring 400-500 x 5.5-8.5 μm. 2) Diancisters with a chord of 118-143 μm. 3) Diancisters with a chord of about 30 μm, rare. 4) Sigmas C- or S-shaped, with a chord of 20-30 μm, thin.

Hamacantha implicans Lundbeck

Hamacantha implicans Lundbeck, 1902: 100

Occurrence. Off Calvi, depth 121-149 m, detrital, dredge, 14-15 July 1969. R.N. NIS.85.12, NIS.83.11.

Description. A few small fragments were available, entirely used for preparations. In the dry state they were soft and fragile, cream coloured. The ectosome, separable, is supported by tangentially arranged megascleres. The inhalant areas have a cribrous appearance, and the spicules are in tracts forming an open reticulation. The spicules are closer and in confusion in the exhalant areas, from which some oscular papillae arise.

Spicules. 1) Styles fusiform, straight or slightly curved, measuring 320-460 x 5.5-12 μm. 2) Diancisters with a chord of 198-234 μm. 3) Raphides measuring 100-130 μm.

Hamacantha falcula (Bowerbank)

Halichondria falcula Bowerbank, 1874: 207

Occurrence. Off Calvi, depth 150 m, detrital, trawl, 31 July 1974. R.N. NIS.14.

Off Calvi, depth 135 m, detrital, trawl, 17-18 July 1975. R.N. NIS.1, NIS.3, NIS.19, NIS.25.3.

Banc du Magaud, depth 170-190 m, detrital, dredge, 19 September 1969.R .N. NIS.28.1, NIS.67.8.

Off Calvi, depth 117-155 m, detrital, dredge, 14-18 September 1969. R.N. NIS. 68.4, NIS.75.1, NIS.76.1, NIS.77.2, NIS.78.1, NIS.81.1, NIS.82.24, NIS.83.22, NIS.83.46, NIS.85.8, NIS.87.9, NIS.87.19.

Gulf of Genoa, depth about 500 m, mud and corals, trawl. R.N. PF.454.

Description. The material consists of fragments, the largest of which (NIS.1, NIS.19, NIS.85.8) are irregularly elongated, up to 8 cm long, 1-2 cm thick. Specimen PF.454 was encrusting on *Lophelia prolifera*. The consistency in spirit is firm and compressible, in the dried state soft and fragile. The colour of the dry specimens is cream to buff. The surface is smooth, in some specimens microscopically hispid. The ectosome is transparent, separable, supported by tangentially arranged megascleres. On most of the surface representing the inhalant area, the spicules, in rather loose, paucispicular tracts, form a reticulated cribrous pattern, with meshes about 200 µm wide. Otherwise, they are densely arranged. On the latter area only few exhalant papillae have been recognized.

The choanosomal skeleton is made by ascending dense tracts of megascleres branching and anastomosing, 50-120 µm thick, from which diancisters obliquely project, attached to the tract by only the margin of one hook.

Spicules. 1) Styles fusiform to strongyloxeas, measuring 370-440 x 7-12 µm. 2) Diancisters with a chord of 105-135 µm. 3) Diancisters with a chord of 34-59 µm. 4) Diancisters with a chord of 18-26 µm. 5) Toxas with a chord of 60-120 µm.

BIEMNIDAE

Desmacella inornata (Bowerbank)

Halichondria inornata Bowerbank, 1866: 271

Occurrence. Off Calvi, depth 140 m, detrital, dredge, 19 May 1976. R.N. NIS.5.

Off Calvi, depth 135 m, detrital, dredge, 17-18 July 1975. R.N. NIS.12.5, NIS. 19.8, NIS.21.5.

Banc du Magaud, depth 190 m, detrital, dredge, 19 September 1969. R.N. NIS. 67.9, NIS.67.7.

Off Calvi, depth 120-155 m, detrital, dredge, 14-16 July 1969. R.N. NIS.70.9, NIS.75.2, NIS.76.2, NIS.83.12, NIS.83.48, NIS.85.7, NIS.85.13, NIS.83.28.

Gulf of Genoa, depth about 500 m, mud and corals. R.N. PF.458.

Description. Most specimens are very small, attached to or enveloping various debris, amorphous or in the form of tapering digitations. The largest one (NIS.5) is irregularly elongated, measuring 45 x 7 mm, attached to a shell. Specimen PF.458 was encrusting on *Lophelia pertusa* (Pall.). The dry specimens are cream to buff, fragile; those in spirit are light brown and moderately firm, compressible. The surface is microscopically hispid. The ectosome is separable, supported by densely intercrossing, tangentially arranged megascleres. The choanosome is cavernous, with a main skeleton made by ascending dense spicular tracts variously branching and anastomosing.

Spicules. 1) Tylostyles slightly curved, fusiform, measuring 250-1000 x 6.5-20 µm (in specimen PF.458 they may reach 1400 x 28 µm). A perfectly well-rounded tyle, most frequently observable, appears characteristic, but modifications do occur, in various degrees. 2) Sigmas with a chord of 29-44 µm, thin.

ESPERIOPSIDAE

Crambe crambe (Schmidt)

Suberites crambe Schmidt, 1862: 66

Occurrence. Leuca W., rocky shore and superficial cave, 10 July 1967 R.N. SAL.86, SAL.111, SAL.113.

Gallipoli, depth 1-10 m, rock, diver, 17 September 1966. R.N. SAL.195, SAL. 200b, SAL.205.

Porto Ercole, depth 5 m, rock, diver, September 1962. R.N. 515.

Giannutri, Spalmatoi, depth 15 m, rocks, diver, September 1962. R.N. 541.

Porto Ercole, Isolotto, depth 0.5 m, rocky shore, 31 August 1963. R.N. 569, 597.

Limski Kanal, south coast, depth 1-3 m, rock and mud, diver, 29 September 1971. R.N. LI.11.

Tremiti Islands, S. Domino, Punta Provvidenza, depth 9-12 m, underwater cave, diver, July 1966. R.N. PTR.F.2, PTR.F.15.

Crete, Gournia, rocky shore, 20 September 1969. R.N. CRT.12.

Portofino, Olivetta, depth 1 m, rocky shore, 19 June 1965. R.N. PF.42.

Portofino, Lighthouse, depth 6 m, rock, 18 August 1965. R.N. PF.59.

Portofino, Aurora, depth 20-30 m, rocks, diver, 15 October 1962. R.N. PF.371, PF.368.

Porto Badisco, depth 2-3 m, rocky shore, diver, 9 July 1967. R.N. SAL.28.

Remarks. Desmas have been found in the following specimens: SAL.111, SAL.113, 569, 597, LI.11, CRT.12, PF.42. Chelas have been observed in SAL.113, 569, 597, LI.11.

COELOSPHAERIDAE

Dragmatella aberrans (Topsent)

Desmacella aberrans Topsent, 1890: 67

Occurrence. Off Calvi, depth 128 m, detrital, dredge, 18 July 1975. R.N. NIS.4.4.

Off Calvi, depth 150 m, detrital, trawl, 31 July 1974. R.N. NIS.6.

Description. (Fig. 62) Specimen NIS.4.4 is somewhat flattened, measuring 10 x 13 x 4 mm, with point of attachment on the rim. It bears numerous papillae up to 4 mm high. The consistency (in spirit) is firm, the colour buff. The ectosome is hyaline, neatly separable. Abundant minute detritus is englobed in the choanosome.

Specimen NIS.6 is massive, 11 x 5 mm, bearing five conical papillae tapering to acute points, the largest one measuring 9 mm. The surface is smooth, hyaline (in spirit). The ectosome, firm, detachable, includes very fine sand; coarse sand fills the interior.

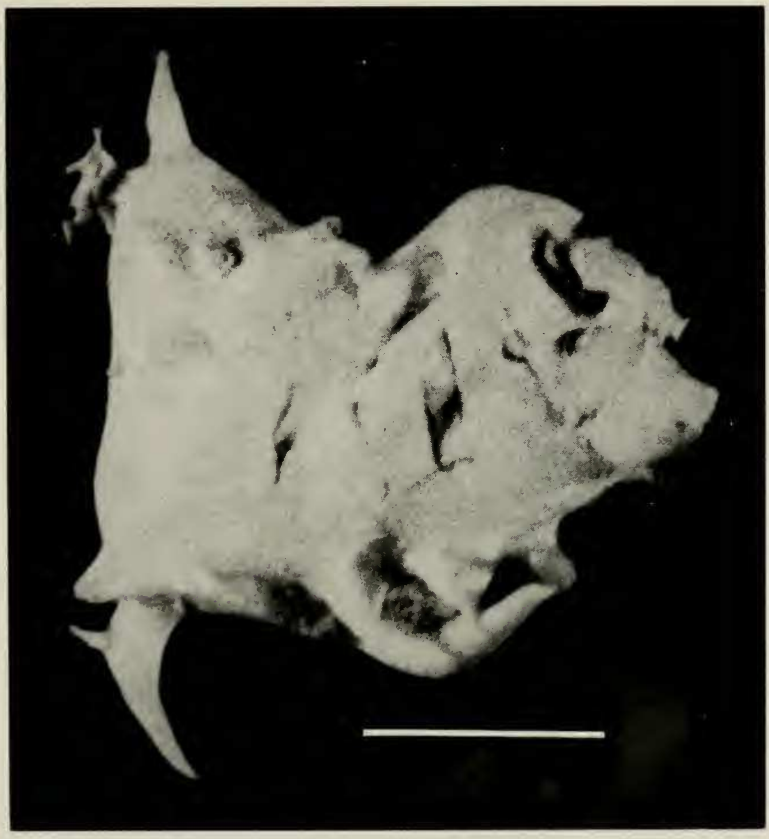

Fig. 62 - *Dragmatella aberrans*, specimen NIS.4.4 (dry). Scale: 0.5 cm.

Spicules. 1) Styles straight to slightly curved, measuring 400-600 x 6-14 μm. They are fusiform, with the basal part generally markedly attenuated (e. g. thickness at base 7 μm, thickness at the middle of the shaft 13.5 μm). 2) Raphides up to about 200 μm, very thin.

Inflatella (?) sp.

Occurrence. Bay of Naples, unnamed shoal south of Pozzuoli, east of Ischia, depth 120 m, mud, dredge, 4 September 1969. R.N. CAB.89, CAB.90.

Description. (Fig. 63) The two specimens were growing on pebbles and consisted of small, erect, partly branching tubular processes, measuring about 5-10 x 1 mm. The colour was buff. The material has been entirely used for spicule preparations.

Spicules. 1) Strongyles irregularly curved or flexuous, measuring 220-260 x 12-14.5 μm. 2) Tylotes measuring 150-170 x 6-7 μm, heads about 8.5 μm.

Remarks. The allocation of this sponge is tentative, partly owing to the inadequacy of the available material, partly because its peculiar spiculation gives no indication of near relatives. It is provisionally placed in the Coelosphaeridae – a very heterogeneous family – in the genus *Inflatella*, itself rather artificial.

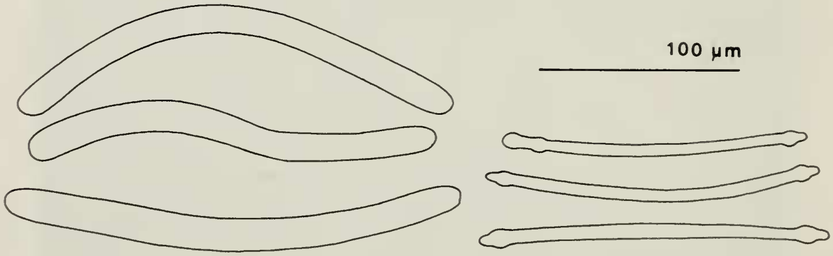

Fig. 63 - Spicules of *Inflatella* (?) sp.

CRELLIDAE

Yvesia topsenti (Babic)

Grayella topsenti Babic, 1922: 246

Occurrence. Porto Ercole, Grotta Azzurra, depth 6-12 m, superficial cave, diver, 5 September 1963. R.N. 583.

Portofino, Vessinaro, depth 30 m, September 1965. R.N. PF.336.

Description. 583: cushion-shaped, about 1 cm thick, widely spreading, softly fleshy and slightly mucous. Surface violaceous, interior yellowish.

Spicules. 1) Strongyles slightly sinuous, generally thicker at the middle, with extremities sometimes modified, 210-290 x 3-5.5 μm. 2) Acanthoxeas slightly curved, 105-130 x 4-9 μm. 3) Sigmas 12-36 μm. 4) Isochelas tridentate, 13-17 μm.

Crella elegans (Schmidt)

Cribrella elegans Schmidt, 1862: 70

Occurrence. Bogliasco, depth 20-25 m, conglomerates, trammel, 29 June 1971. R.N. PF.310.

Description. Encrusting on shell with hermit crab. Deep pink.

Spicules. 1) Tornotes straight, 210-250 x 3-5.5 μm. 2) Acanthoxeas straight, 65-90 x 2.5-8 μm. 3) Acanthostyles about 135 μm, very rare.

Crella pulvinar (Schmidt)

Myxilla pulvinar Schmidt, 1868: 14

Occurrence. Porto Ercole, Grotta Azzurra, depth 6-12 m, superficial cave, diver, 5 September 1963. R.N. 579.

Riva Trigoso, depth 33 m, rocks, diver, 30 October 1970. R.N. PF.185.

Portofino, S. Fruttuoso, depth 30 m, rock, diver, 30 July 1962. R.N. PF.362.

Portofino, Punta Chiappa, depth 40 m, rocks, diver, 12 October 1962. R.N. PF.378.

Description. 579: encrusting, thin, on *Ircinia variabilis*, yellow with orange-yellow maculations.

PF.185: thinly encrusting on *Aaptos aaptos*, dull yellow.

PF.362: encrusting on *Myriapora truncata*, bright yellow.

PF.378: encrusting on madreporarians, orange (C.C.211).

Spicules. 1) Strongyles straight, 280-380 x 4-5.5 μm. The extremities may be variously modified. 2) Acanthoxeas straight or slightly curved, 80-105 x 1.5-2.5 μm. 3) Acanthostyles 200-250 μm, thin, very scarcely spined. They are always rare.

MYXILLIDAE

Damiriella cavernosa (Topsent)

Damiria cavernosa Topsent, 1892b: XXII

Occurrence. Torre a Mare (Bari), depth 12-15 m, conglomerates, diver, 25-27 September 1967. R.N. COR.11.

Description. A small membraneous coating inside a cavity of the conglomerate, hispid, yellow. Entirely used for spicule preparations.

Spicules. 1) Strongyles measuring 240-320 x 6-6.5 μm. They are not quite straight, but slightly irregularly curved. The modifications of their ends are less pronounced than in the specimen which I described from Naples (1978: 56). As in that specimen, spines, as noted by TOPSENT (1936: 19), have not been observed. 2) Tylotes measuring 300-360 x 4-5 μm. 3) Isochelas arcuate with a chord of 29-38 μm. 4) Isochelas arcuate with a chord of 12-14 μm, with pronounced curvature.

Lissodendoryx isodictyalis (Carter)

Halichondria isodictyalis Carter, 1882: 285

Occurrence. Pomer Bay (Pula), fouling community, 14 February 1972. R.N. LI.39, LI.42, LI.47.

Description. The specimens were small encrustations on *Ostrea edulis*. Entirely used for spicule preparations.

Spicules. 1) Styles 170-230 x 6-8 μm. 2) Tylotes 200-240 x 4-5 μm. 3) Isochelas arcuate 27-33.5 μm. 4) Sigmas 22-30 μm.

Myxilla rosacea (Lieberkühn)

Halichondria rosacea Lieberkühn, 1859: 521

Occurrence. Porto Cesareo, depth 0.5-1 m, lagoon, sand and rock, 24 September 1971. R.N. PC.72, PC.78, PC.80.

Castro Marina, depth 25-35 m, conglomerates, dredge, 2 February 1968. R.N. TRI.64.

Leuca E., depth 0.7 m, rocky shore, 9 July 1967. R.N. SAL.72.

Leuca W., shallow water, rocky shore, 10 July 1967. R.N. SAL.77, SAL.238.

Off Calvi, depth 123-147 m, detrital, dredge, 15 July 1969. R.N. NIS.87.7, NIS. 87.14.

Description. PC.72: a small fragment, fleshy, yellowish.

PC.78: amorphous, agglomerating sand, orange (C.C.186).

PC.80: soft, very mucous, orange (C.C.186).

TRI.64: a small fragment, soft, mucous, light orange.

SAL.77: small, mucous, orange.

NIS.87.7: amorphous, soft, fragile, mucous.

Spicules. The spicule sizes of the specimens, with the exception of NIS.87.7 and NIS.87.14, are: 1) Acanthostyles 147-180 x 5-8 μm. 2) Tornotes 160-180 x 2.5-4 μm. 3) Isanchoras 15-33 μm. 4) Sigmas 16-48 μm. The spicules of the two NIS specimens are a little stronger: 1) Acanthostyles 214-250 x 7-8 μm. 2) Tornotes 200-220 x 4-5 μm. 3) Isanchoras 16-45 μm. 4) Sigmas 15-41 μm.

Myxilla iotrochotina (Topsent)

Dendoryx iotrochotina Topsent, 1892b: XXI

Occurrence. Leuca W., depth 0-0.5 m, superficial cave, 10 July 1967. R.N. SAL.91, SAL.100.

Description. Small encrustations.

Spicules. 1) Anisotornotes 120-150 x 2.5-3.5 μm. 2) Acanthostyles 95-120 x 3.5-5 μm. 3) Isanchoras 14-16 μm. 4) Sigmas 12-28 μm.

Melonanchora emphysema (Schmidt)

Desmacidon emphysema Schmidt, 1875: 118

Occurrence. Off Calvi, depth 128 m, detrital, dredge, 18 July 1975. R.N. NIS.4.7.

Description. The specimen, measuring about 15 mm across, is irregularly globose, attached to debris, with a few irregular papillae. In spirit, the colour in whitish, hyaline, the surface smooth; oscules are not recognizable. The ectosome, supported by tangentially arranged, thickly-set megascleres, is separable; its consistency is firm. The choanosome, with a skeleton of ascending polyspicular tracts, is rather loose and fragile.

Spicules. 1) Strongyles to tylotes, generally not quite straight, thicker at the middle, measuring 380-490 x 6-11 μm. 2) Spheranchoras 37-43 μm. 3) Isanchoras arcuate 32-49 μm. 4) Isanchoras arcuate 19-21 μm.

TEDANIIDAE

Tedania anhelans (Lieberkühn)

Halichondria anhelans Lieberkühn, 1859: 521

Occurrence. Torre a Mare, depth 30 m, conglomerates, diver, 22 June 1970. R.N. COR.153.

Leuca W., shallow water, rocky shore, 8-10 July 1967. R.N. SAL.52, SAL.69, SAL.80, SAL.181, SAL.89, SAL.187.

Taranto, Mar Piccolo, shallow water, mud and detritus, 2 August 1972. R.N. PC.103, PC.106, PC.112, PC.115.

Bogliasco, depth 7 m, rocks, diver, 11 November 1970. R.N. PF.228.

Description. The specimens were small, encrusting on various substrates, from brown to reddish brown.

Spicules. 1) Styles 210-270 x 4.5-11 µm. 2) Tylotes 185-250 x 2.3-4 µm. 3) Onychaetes 120-160 µm.

HYMEDESMIIDAE

Hymedesmia peachii Bowerbank

Hymedesmia peachii Bowerbank, 1882: 64

Occurrence. Tremiti Islands, Il Cretaccio, depth 0.2-1 m, superficial cave, 5 July 1966. R.N. PTR.B.3.

Portofino, Altare, depth 50-70 m, detrital and rocks, trammel, 18 September 1965. R.N. PF.75.

Leuca W., shallow water, superficial cave, 10 July 1967. R.N. SAL.124.

Description. Small encrustations, entirely used for preparations. Specimen SAL.124 was recorded as orange in life.

Spicules. 1) Tornotes 177-250 x 2-2.5 µm. One extremity is thinner, more elongated. 2) Acanthostyles 50-300 x 4.5-9 µm, entirely spined, except the distal part of the larger ones. 3) Isochelas arcuate 26-34.5 µm. 4) Isochelas arcuate 18-21 µm.

Hymedesmia pansa Bowerbank

Hymedesmia pansa Bowerbank, 1882: 56

Occurrence. Leuca W., shallow water, rocky shore, 8 July 1967. R.N. SAL.36.

Panarea, shallow water, rock, 15 August 1971. R.N. PAN.10c, PAN.30.

Ponza, depth 0-2 m, superficial cave, 7 July 1969. R.N. PZ.39.

Description. All the specimens were thin encrustations, entirely used for spicule preparations.

Spicules. 1) Tornotes to subtylotornotes 200-290 x 2.5-3 µm. 2) Acanthostyles 200-270 x 7-9 µm, spination of distal half scarce or absent. 3) Acanthostyles 80-110 x 4.5-8 µm, entirely spined. 4) Isochelas arcuate 16.5-21 µm.

Hymetrichita rectirhaphis sp. n.

Occurrence. Ponza, depth 5 m, superficial cave, diver, 5 July 1969. R.N. PZ.12.

Holotype. MSNG 47178.

Description. (Fig. 64) The specimen consists of a very thin encrustation on a living *Spondylus gaederopus*. The colour in life was orange-yellow; it is light brown in the present dry state.

Spicules. 1) Acanthostyles gently curved at the first third of their length, with short spines dense at the base but thinning out gradually and leaving the last third smooth, 220-330 x 8-11 µm. 2) Acanthostyles straight or slightly curved, fusiform, entirely spined, 70-90 x

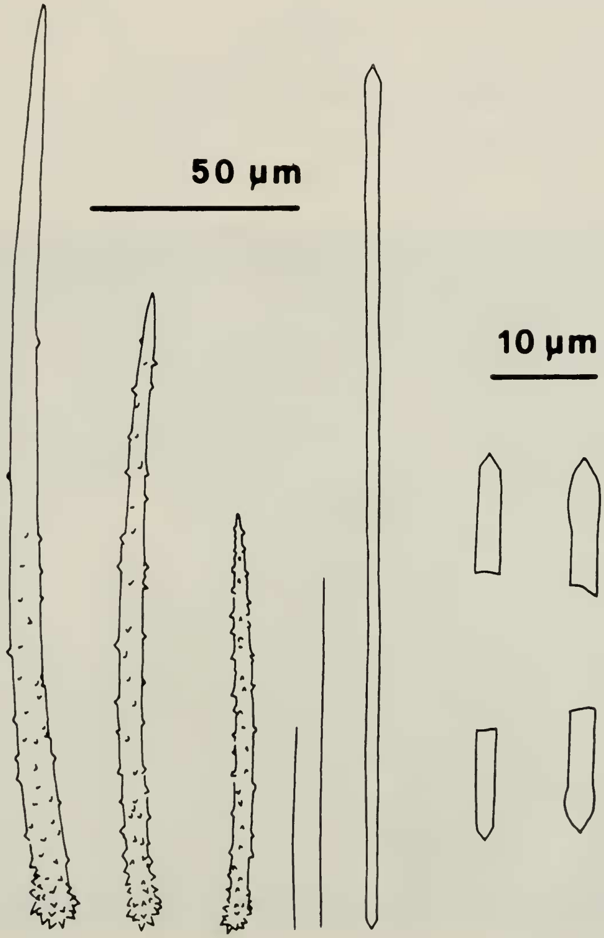

Fig. 64 - Spicules of *Hymetrichita rectirhaphis* sp. n.

5-7 μm. 3) Acanthostyles of an intermediate form, straight or slightly curved, entirely spined, 150-183 x 6-8 μm. 4) Tornotes straight, with an extremity slightly thinner than the other, 180-270 x 2-3 μm. The conical point is short, sometimes preceeded by a faint swelling. 5) Raphides straight, 50-90 μm.

Remarks. The genus *Hymetrichita* was hitherto known only from the single specimen of *H. rhaphigena* (Topsent, 1904: 192) dredged at the Azores from a depth of 1360 m.

ANCHINOIDAE

Anchinoe paupertas (Bowerbank)

Hymeniacidon paupertas Bowerbank, 1866: 223

Occurrence. Bogliasco, depth 7 m, rock, diver, 11 November 1970. R.N. PF.223, PF.235.
Porto Tricase, depth 15-30 m, conglomerates, diver, 24 September 1970. R.N. TRI.196.
Torre a Mare, depth 18 m, conglomerates, diver, 10 October 1967. R.N. COR.40.
Leuca W., shallow water, rocky shore, 8 July 1967. R.N. SAL.57.

Description. All the specimens were small, thin encrustations, deep red.

Spicules. 1) Strongyles to subtylostrongyles to subtylotes 205-307 x 2.5-4.5 μm. 2) Acanthostyles 260-420 x 7-9 μm. The spination is limited to the proximal part. 3) Acanthostyles 95-125 x 4.5-7 μm, entirely spined.

Anchinoe fictitius (Bowerbank)

Microciona fictitia Bowerbank, 1866: 124

Occurrence. Porto Tricase, superficial cave, 18 October 1967. R.N. TRI.5.
Porto Tricase, depth 15 m, conglomerates, diver, 22 September 1970. R.N. TRI.91.
Porto Tricase, depth 60 m, detrital, dredge, 24 September 1970. R.N. TRI.234.
Leuca W., shallow water, rocky shore, 10 July 1967. R.N. SAL.81, SAL.137.

Description. Thinly encrusting, dark red to brick red in life.

Spicules. 1) Tornotes 220-350 x 3.5-4.5 μm. 2) Acanthostyles 200-410 x 5-10 μm. 3) Acanthostyles 70-150 x 4-6 μm. 4) Isochelas arcuate 20-28 μm.

Anchinoe mercator (Schmidt)

Suberotelites mercator Schmidt, 1868: 12

Occurrence. Portofino, off Lighthouse, depth 110 m, detrital, trammel, 28 September 1971. R.N. PF.327.

Description. (Fig. 65) The material consists of several pieces which may be fragments or single individuals. The largest measures 10 x 4 x 2 cm. They consist of contort, extremely irregular processes, digitations, lobes, also thinly branching, anastomosing or joined by laminar growths. The consistency (in spirit) is firm, coriaceous. The colour in life was pink to light orange (c.c.200-250), it is now violaceous (c.c.109).

Spicules. 1) Strongyles often faintly subtylote, one end slightly thinner than the other, 220-240 x 2.7-4 µm. 2) Acanthostyles 160-200 x 6-7.3 µm. 3) Acanthostyles 110-120 x 4-5 µm. The acanthostyles of the

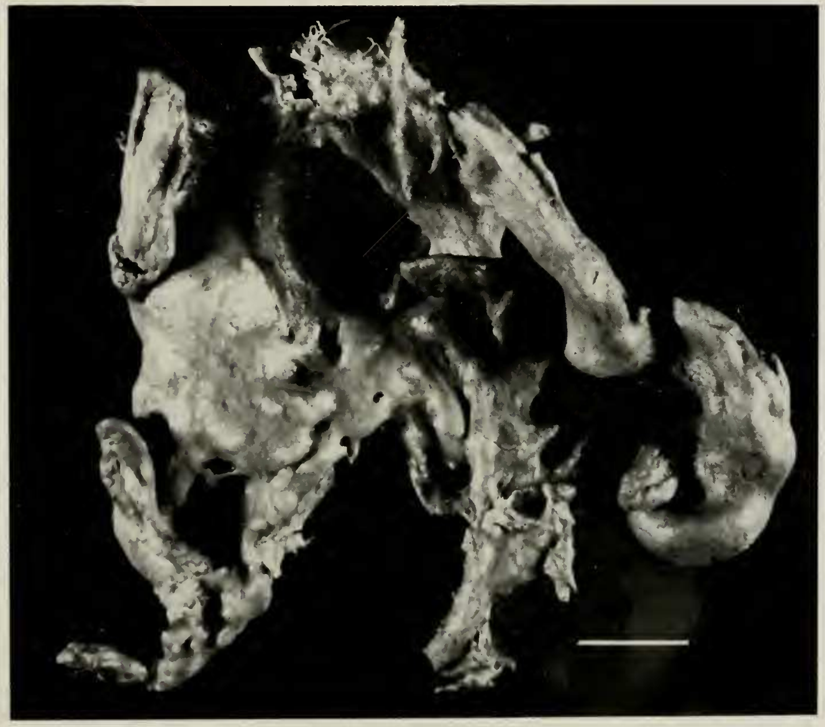

Fig. 65 - *Anchinoe mercator*, specimen PF.327 (in spirit). Scale: 1 cm.

two categories are distinguished only by their size: both are straight or gently curved, entirely but moderately spined.

Anchinoe tenacior Topsent

Anchinoe tenacior Topsent, 1925b: 666

Occurrence. Bogliasco, depth 10 m, rocks, diver, 10 February 1973. R.N. PF.347.

Portofino, Punta Chiappa, depth 40 m, rocks, diver, 12 October 1962. R.N. FP.376.

Tremiti Islands, S. Domino, Punta Provvidenza, depth 9-12 m, underwater cave, July 1966. R.N. PTR.F.21, PTR.F.7.

Tremiti Islands, S. Domino, Grotta delle Viole, depth 3 m, superficial cave, diver, 23 July 1968. R.N. PTR.H.10.

Leuca W., shallow water, rocky shore, 8 July 1967. R.N. SAL.54.

Barletta, depth 15-16 m, conglomerates, diver, 24 October 1967. R.N. COR.53, COR.54.

Torre a Mare, depth 30 m, conglomerates, diver, 22 june 1970. R.N. COR.149.

Porto Ercole, Isolotto, shallow water, rocky shore, 1 September 1963. R.N. 584.

Portofino, Lighthouse, depth 6 m, rock, diver, 18 August 1965. R.N. PF.58.

Bogliasco, depth 7 m, rock, diver, 11 November 1970. R.N. PF.227.

Crete, Agio Nicolaos, superficial cave, 22 September 1969. R.N. CRT.20, CRT.38.

Tremiti Islands, Il Cretaccio, shallow water, superficial cave, 5 July 1966. R.N. PTR.B.5.

Gallipoli, shallow water, rocky shore, 17 September 1966. R.N. SAL.203.

Leuca E., superficial cave, 22 September 1966. R.N. SAL.220.

Porto Tricase, superficial cave, 18 October 1967. R.N. TRI.2.

Porto Tricase, depth 23 m, conglomerates, dredge, 18 October 1967. R.N. TRI.17.

Castro Marina, depth 25-35 m, conglomerates, dredge, 2 February 1968. R.N. TRI.77.

Description. All the specimens were thinly encrusting; most of them were entirely used for spicule preparations. Massive specimens have not been observed. The colour in life was a violaceous blue, more or less intense; only in two or three specimens a yellowish tinge was noted.

Spicules. 1) Acanthostyles 160-220 μm. 2) Acanthostyles 80-110 μm. 3) Strongyles 190-240 μm. 4) Isochelas arcuate 16-21 μm.

Hamigera hamigera (Schmidt)

Cribrella hamigera Schmidt, 1862: 70

Occurrence. Leuca W., depth 0.3-2 m, rocky shore, 8-10 July 1967. R.N. SAL.17, SAL.38, SAL.56, SAL.83, SAL.88, SAL.105, SAL.132, SAL.239, SAL.244, SAL.87, SAL.98.

Porto Badisco, shallow water, rocky shore, 9 July 1967. R.N. SAL.29.

Pomer Bay (Pula), shallow water, fouling community, 14 February 1972. R.N. LI.33, LI.37, LI.49.

Taranto, Mar Piccolo, shallow water, mud and debris, June 1972. R.N. PC.86

Description. The specimens marked SAL were fleshy, thickly encrusting on bare rock, deep red, very abundant locally. The specimens LI were encrusting on *Ostrea edulis*.

Spicules. 1) Subtylostrongyles straight, 220-300 x 4-5 μm. 2) Subtylostyles curved, 240-370 x 4.5-7 μm. 3) Isochelas arcuate 22 μm.

Stylostichon lieberkuehni (Burton)

Hymedesmia lieberkuehni Burton, 1930: 532

Occurrence. Banc du Magaud, depth 100 m, detrital, dredge, 19 September 1969. R.N. NIS.66.9.

Description. The specimen is small and fragmented, cream coloured and fragile in the dry state.

Spicules. 1) Tornotes with one end slightly more elongated, 210-230 x 4-5.5 μm. They are often slightly curved or sinuous. 2) Acanthostyles 74-316 x 4.5-8 μm. The smaller ones are generally straight and entirely spined; in the larger ones, curved, the spination of the distal part tends to become sparse and disappear. These spicules do not appear clearly divisible in categories; it may be noted, however, that in the available specimen a size between 195 and 260 μm was not observed. 3) Isochelas arcuate 11.5-16 μm. 4) Isochelas arcuate 20-23 μm.

Stylostichon dives (Topsent)

Microciona dives Topsent, 1891: 543

Occurrence. Off Calvi, depth 123-147 m, detrital, dredge, 15 July 1969. R.N. NIS.87.20.

Description. The specimen is small, shapeless, agglomerating various debris. The consistency is fleshy, the colour whitish (in spirit).

Spicules. 1) Tornotes straight, 185-215 x 2-2.5 μm. One extremity is always slightly thinner than the other. 2) Acanthostyles 220-300 x 7-11.5 μm, curved. 3) Acanthostyles 75-110 x 4-5 μm, straight. 4) Isochelas arcuate, 9.5-47 μm. 5) Sigmas 25-50 μm, thin.

CLATHRIIDAE

Antho involvens (Schmidt)

Myxilla involvens Schmidt, 1864: 37

Occurrence. S. Caterina, shallow water, rocky shore, 7 July 1967. R.N. SAL.12.

Leuca W., shallow water, rocky shore, 8-10 July 1967. R.N. SAL.75, SAL.78, SAL.96.

Leuca E., shallow water, rocky shore, 9 July 1967. R.N. SAL.171.

Description. All the specimens were thin encrustations, red in life.

Spicules. 1) Styles curved, 140-490 x 6-12 µm, entirely smooth, occasionally faintly subtylote. 2) Acanthostyles slightly curved, 100-150 x 6-9 µm. The spination is more or less reduced; spicules with only two or three spines or none at all are not rare. 3) Subtylostyles straight 230-410 x 2-2.5 µm. 4) Toxas 29-210 µm. The points of the larger ones may be faintly spined. 5) Isochelas palmate 14-16 µm, very rare in all the specimens.

Clathria toxivaria (Sarà)

Microciona toxivaria Sarà, 1959: 14

Occurrence. Leuca W., depth 0-1 m, rocky shore, 8-10 July 1967. R.N. SAL.18, SAL.32, SAL.34, SAL.50, SAL.93, SAL.125, SAL.126, SAL.189, SAL.84.

Leuca E., shallow water, superficial cave, 9 July 1967. R.N. SAL.175, SAL.177.

Porto Tricase, depth 25 m, conglomerates, dredge, 16 November 1967. R.N. TRI.37.

Gargano, Baia di Campi, depth 2-4 m, mud and rocks, diver, 4-5 October 1967. R.N. GAR.31.

Porto Ercole, Isolotto, shallow water, rocky shore, 1 September 1963. R.N. 577.

Description. The specimens were small, orange to orange-brown to deep red in life, also light red. They were thickly encrusting or cushion-shaped; SAL.32, also very small, was erect, branched. The substrata were various, including *Arca*, *Ircinia*, an oxyrhynch crab and *Balanus*.

Spicules. 1) Styles entirely smooth, 190-430 x 6-18 µm. 2) Acanthostyles, accessory, 46-80 x 5-10 µm. 3) Subtylostyles, auxiliary, straight or slightly curved, 110-430 x 2.5-7 µm. The tyle is sometimes faintly spined. 4) Isochelas palmate with a chord of 10.5-13 µm. They are generally rare, missing in some preparations. 5) Toxas with a chord of 27 to 500 µm, not exceeding a thickness of 1 µm. The smaller ones have an even and deep median flexion; the larger ones tend to become almost linear or to lose the typical character of a toxa and assume a more or less pronouncedly curved shape.

Clathria coralloides (Olivi)

Spongia coralloides Olivi, 1792: 264

Occurrence. Porto Tricase, depth 60 m, trammel, 24 September 1970. R.N. TRI.218, TRI.233, TRI.238, TRI.240.

Description. TRI.240 was a small erect digitation, the other specimens were small, cushion-shaped. All were hispid, red.

Spicules. 1) Principal styles curved, smooth, 400-750 x 13-21 μm. They may be faintly subtylote; more often the base is slightly narrowed; a conspicuous constriction as figured by TOPSENT (1925: 646) has not been observed. 2) Accessory styles curved, smooth, 190-300 x 8-18 μm. The modification of their base is slightly more marked than in the principal ones. 3) Auxiliary subtylostyles measuring 260-510 x 2-4 μm. They are normally straight, but the smaller ones may be flexuous. 4) Toxas with a chord of 33-150 μm, up to 4.5 μm thick, of uniform shape, rather abundant. 5) Palmate isochelas fairly abundant, with a chord of 12-14.5 μm.

Clathria toxistyla (Sarà)

Microciona toxistyla Sarà, 1959: 17

Occurrence. Portofino, Olivetta, depth 1 m, rocky shore, 30 August 1962. R.N. PF.354.

Description. (Fig. 66) The specimen is massive, but measuring only a few millimetres.

Spicules. 1) Principal styles entirely smooth, evenly curved at one third of their length or very slightly bent, 240-480 x 9-18 μm. 2) Accessory acanthostyles with base and middle of shaft always spined, first and last third of shaft almost devoid of spines, 56-76 μm; thickness measured at the middle, spines included, 6.5-12 μm. 3) Auxiliary styles to subtylostyles 135-430 x 2.7-6.7 μm. 4) Toxas variable, with a chord of 60-420 μm, thin. The larger ones tend to lose the median flexion and appear almost linear, or evenly curved, or sinuous.

Remarks. The markedly bent styles or their modification to oxeas, as figured for the type of this species, have not been observed in the present material.

Clathria marissuperi sp. n.

Occurrence. Rovinj, depth 33 m, detrital and mud, dredge, 27 March 1969. R.N. LI.27.

Holotype. MSNG 47179.

Description. (Fig. 67) The sponge, consisting of anastomosing irregular foliaceous branches, measures 22 x 10 mm. In the dry state, the consistency is soft, the colour grey. The skeletal structure is plumoreticulated, the spongin is not abundant. The plurispicular tracts, terminating at the surface in diverging tufts, are echinated also by principal styles.

Spicules. 1) Principal styles slightly curved, measuring 160-410 x 8-16 µm. Not always, but often, their base is faintly spined.

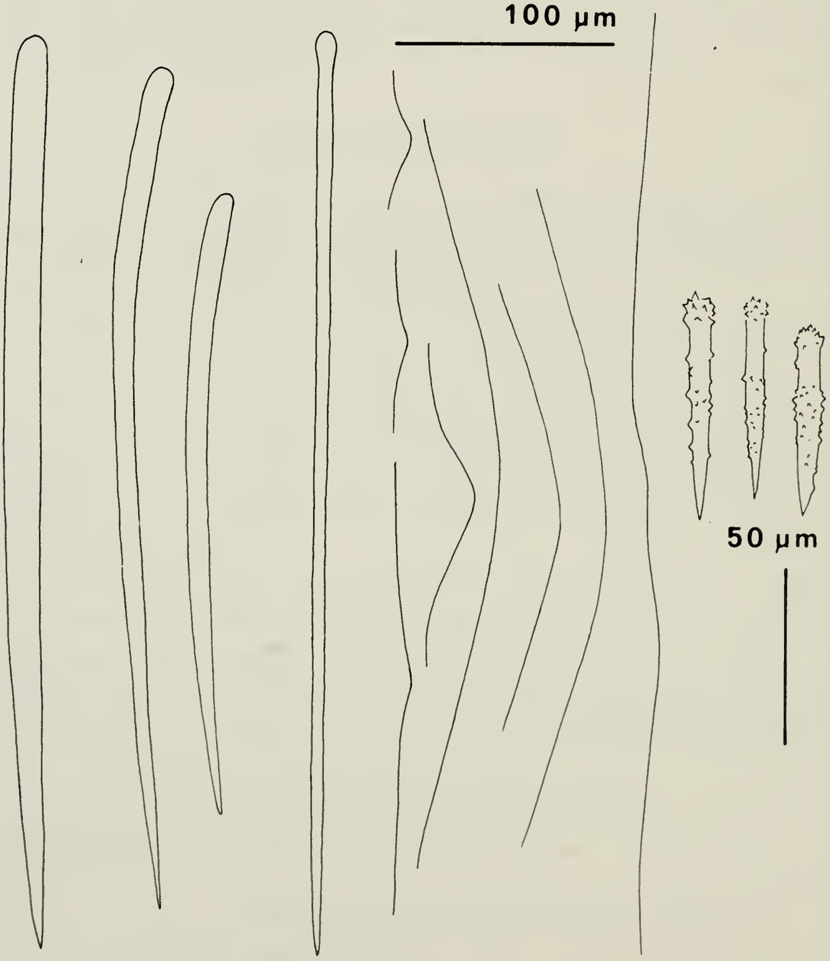

Fig. 66 - Spicules of *Clathria toxistyla*.

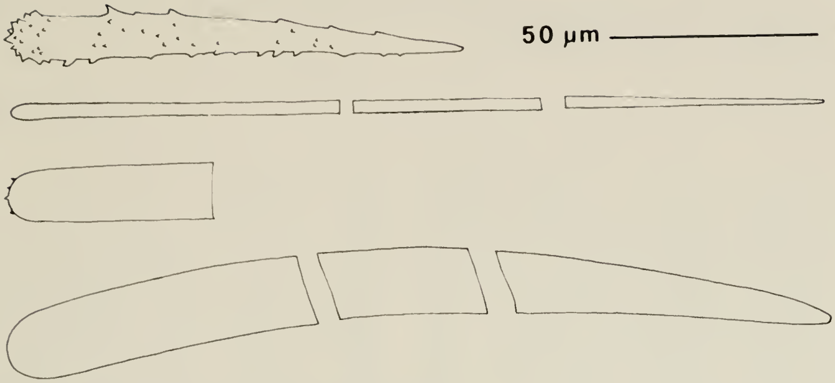

Fig. 67 - Spicules of *Clathria marissuperi* sp. n.

2) Accessory acanthostyles measuring 100-130 x 6.5-8 µm. 3) Auxiliary styles to subtylostyles measuring 200-300 x 2.5-3.5 µm. Microscleres have not been observed.

Clathria plurityla sp. n.

Occurrence. Riva Trigoso, depth 30 m, detrital and rocks, diver, November 1970. R.N. PF.276.

Holotype. MSNG 47180.

Description. (Fig. 68) The specimen is a thick coating, about half a square cm wide, on conglomerated debris. Now in the dry state, it is reduced to its skeleton. The structure is plumoreticulated, with main ascending and branching tracts made by two to three spicules across joined by scarce spongin, terminating in diverging tufts of spicules. Secondary tracts form a reticulation connecting the main ones. The spicular tracts are sparsely echinated by both principal and accessory spicules. On some portions of the substratum the skeleton appears at the « leptoclathria » stage.

Spicules. 1) Principal styles to subtylostyles to acanthostyles, slightly curved, measuring 200-325 x 5.5-11.5 µm. They may be entirely smooth or bear scarcely perceptible spines; more often the surface is just minutely rough. Polytylotism is very frequent. 2) Accessory acanthostyles, entirely and minutely spined, measuring 90-160 x 3.5-4.5 µm. 3) Auxiliary subtylostyles straight, measuring 210-230 x 3.5-

4.5 µm. The point is short and sharp. 4) Toxas with a chord measuring 80-120 µm, up to 2 µm thick.

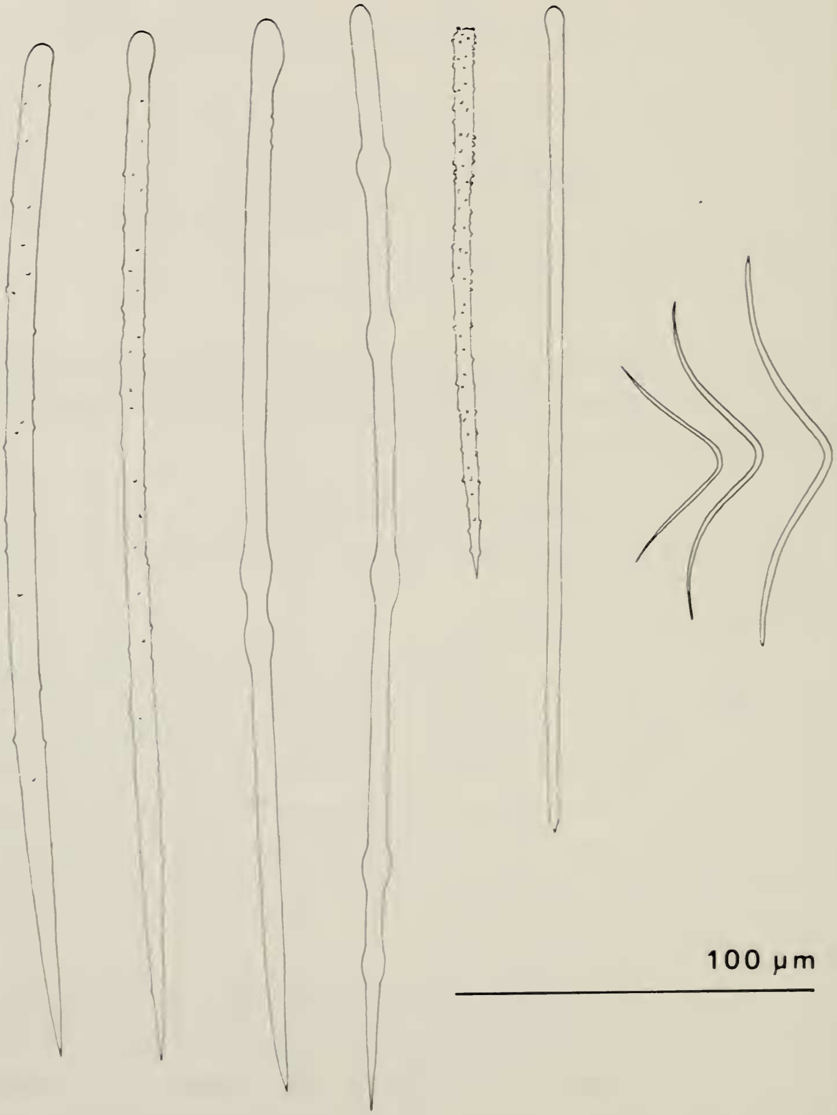

Fig. 68 - Spicules of *Clathria pluritylа* sp. n.

Microciona toxitenuis (Topsent)

Clathria toxitenuis Topsent, 1925b: 655

Occurrence. Porto Tricase, depth 60 m, trammel, 24 September 1970. R.N. TRI.226.

Description. A thin encrustation, hispid, red.

Spicules. 1) Principal acanthostyles slender, curved, with only the base (often marked by a slight constriction) bearing low spines or tubercles, 200-880 x 7-12.5 μm. 2) Accessory acanthostyles with head well marked, distal part with few spines or smooth, 100-170 x 5-6 μm. 3) Auxiliary subtylostyles straight, head scarcely noticeable, 180-450 x 2.5-4.5 μm. Toxas uniform, with short, even flexion, with a chord of 70-470 μm, very thin, rather abundant. 5) Palmate isochelas with a chord of 13-15 μm, very rare.

Microciona strepsitoxa Hope

Microciona strepsitoxa Hope, 1889: 334

Occurrence. Leuca E., shallow water, rocky shore, 9 July 1967. R.N. SAL.170.

Description. Encrusting, orange.

Spicules. 1) Principal acanthostyles slightly curved, 200-700 x 7-12 μm. As a rule, only their base is spined; in the smaller ones sparse spines may extend up to the middle of the shaft. 2) Accessory acanthostyles 74-160 x 4.5-6 μm. 3) Auxiliary subtylostyles 170-310 x 2.5-5.5 μm. The head is often minutely spined. 4) Toxas thin, with a chord of 120-240 μm. A few (three) toxas very thin, with deep even flexion, with a chord of only 10 μm have been observed. They may be proper. 5) Palmate isochelas 12-16 μm, abundant.

Microciona armata Bowerbank

Microciona armata Bowerbank, 1866: 129

Occurrence. Off Gallipoli, depth about 50 m, trawl, 22 September 1966. R.N. SAL.223b.

Description. (Fig. 69) The specimen is encrusting on a small living *Murex*.

Spicules. 1) Acanthostyles with base appearing slightly tylote owing to a subterminal constriction, bearing obtuse spines or tubercles. The shaft is entirely smooth except in the smaller spicules, where sparse spines may be present. The size is 130-470 x 8-19 μm. 2) Acanthostyles entirely but sparsely spined, 80-115 x 7-8 μm. They are not sharply distinguishable from the smaller spicules of the former category. 3) Subtylostyles straight, 130-305 x 2.5-3.5 μm, head often slightly spined. 4) Toxas 90-170 x 1-2 μm, rather rare. Their shape is quite uniform, the points are smooth. 5) Isochelas palmate fairly abundant, 15-21.5 μm.

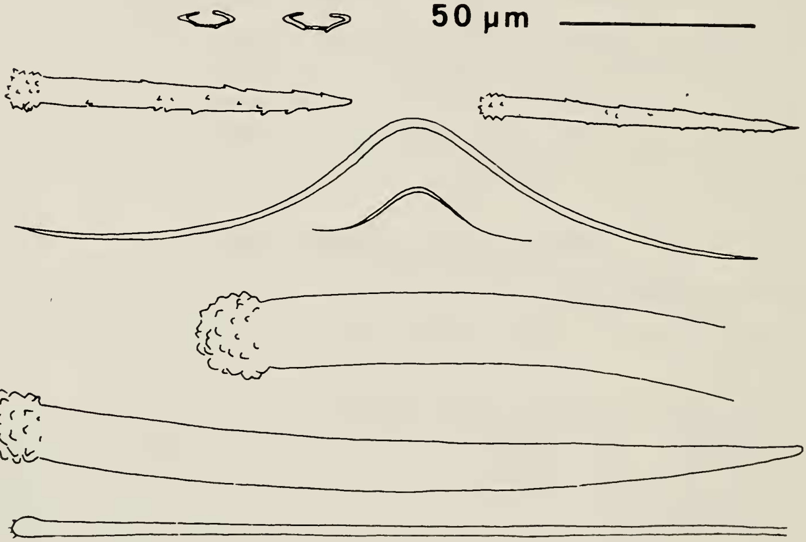

Fig. 69 - Spicules of *Microciona armata*.

Acarnus polytylus sp. n.

Occurrence. Porto Cesareo, lagoon, depth 0.5-1 m, sand and rocks, 24 September 1971. R.N. PC.84.

Holotype. MSNG 47181.

Description. (Fig. 70) The specimen is an amorphous, soft mass aggregating a large quantity of sand. The colour in life was orange (C.C.186); it is brown in spirit.

Spicules. 1) Styles straight or slightly curved, very often subtylote or polytylote. Their base may be finely spined or smooth. Size 290-430 x 11.5-14 μm. 2) Tylotes generally straight, sometimes slightly curved, the tyles finely spined. These spicules are often polytylote. Size 240-

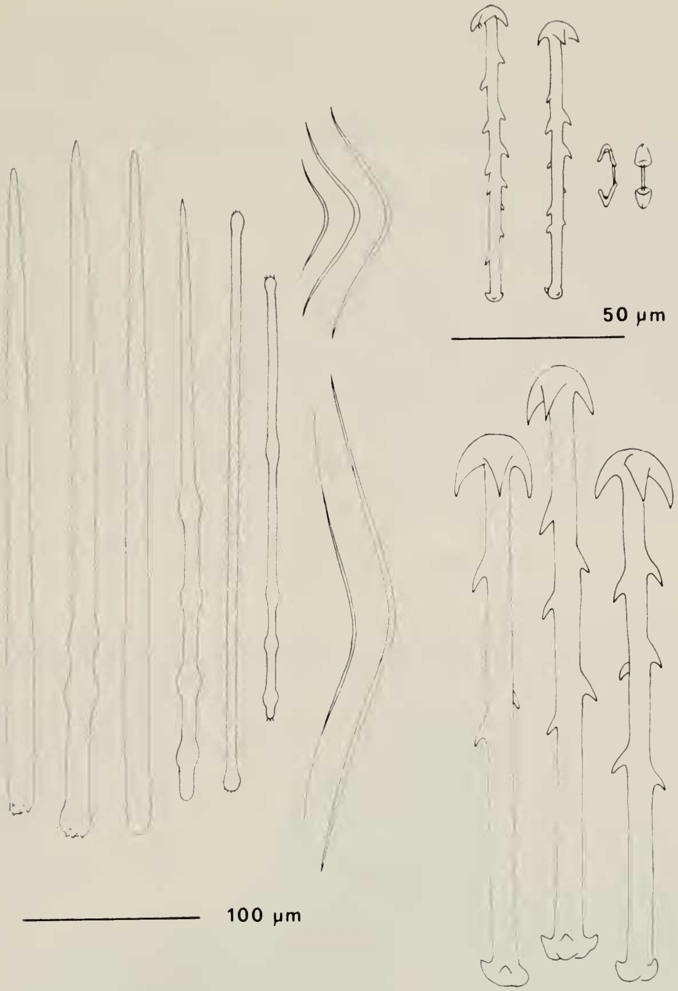

Fig. 70 - Spicules of *Acarnus polytylus* sp. n.

350 x 4-5 μm. 3) Cladotylotes with spination of base reduced or rudimental, 110-170 x 4.5-7 μm. 4) Cladotylotes with spination of base reduced or rudimental, 55-84 x 2-3.5 μm. 5) Toxas markedly arcuate, chord 46-180 μm, thickness from less than 1 μm to 4.5 μm. 6) Toxas with open curvature, 170-340 x 1-2.5 μm. Four toxas have been observed having an unusual size, 540-600 x 7-8 μm, doubtfully proper. 7) Isochelas palmate, 18.5-20.5 μm.

HAPLOSCLERIDA

HALICLONIDAE

Haliclona elegans (Bowerbank)

Isodictya elegans Bowerbank, 1866: 283

Occurrence. Porto Cesareo, lagoon, depth 0.5-1 m, rocks and sand, 24 September 1971. R.N. PC.79.

Description. Small lobes (about 1.5 cm) attached to alga of the genus *Cystoseira*, oscules apical. In life the consistency was soft, the colour dull violet. Preserved in formalin, the specimens are light buff, flabby. The skeleton consists of an isodictyal unispicular network with scarce spongin at the nodes.

Spicules. Oxeas slightly curved, rather variable in thickness, measuring 124-140 x 2.5-8 μm.

Haliclona subtilis Griessinger

Haliclona subtilis Griessinger, 1971: 154

Occurrence. Gargano, Baia di Campi, depth 3-8 m, rocks and mud, diver, 4 October 1967. R.N. GAR.1, GAR.36, GAR.43.

Description. From a common base globose elongated masses arise, 2 to 3 cm high, 1 to 1.5 cm in diameter, with an apical oscule 0.5 to 0.7 cm wide. The colour in life and after preservation is a very light brown, the consistency flabby (soft and fragile when dry). The skeleton is an isodictyal unispicular reticulation with spongin at the nodes, with a hint of main lines directed obliquely toward the surface.

Spicules. Oxeas slightly curved, measuring 118-140 x 4-5.4 μm.

Reniera sarai Pulitzer-Finali

Reniera sarai Pulitzer-Finali, 1969: 97

Occurrence. Limski Kanal, depth 1.5 m, rock and mud, diver, 29 September 1971. R.N. LI.20.

Tremiti Islands, Il Cretaccio, depth 0.5-1 m, superficial cavity, 5 July 1966. R.N. PTR.B.4.

Tremiti Islands, S. Domino, Punta Diamante, depth 2-4 m, superficial cave, diver, 5 July 1966. R.N. PTR.C.8, PTR.C.9.

Tremiti Islands, S. Domino, Cala Tonda, depth 2-4 m, superficial cave, diver, July 1966. R.N. PTR.D. 11.

Tremiti Islands, S. Nicola, depth 10 m, superficial cave, diver, 21 July 1968. R.N. PTR.G.3.

Tremiti Islands, S. Domino, Grotta delle Viole, depth 2-6 m, superficial cave, diver, 23 July 1968. R.N. PTR.H.14, PTR.H.25.

Tremiti Islands, S. Domino, Cala dello Spido, depth 1-4 m, superficial cave, diver, 27 July 1968. R.N. PTR.1.3.

Gargano, Baia di Campi, depth 2-4 m, rocks and mud, diver, 15-21 September 1971. R.N. GAR.50, GAR.63.

Leuca E., depth 4 m, superficial cave, diver, 22 September 1966. R.N. SAL.218.

Zinzulusa Bay, depth 2-6 m, rock and boulders, diver, 8 July 1967. R.N. ZZ.7, ZZ.16, ZZ.17, ZZ.22, ZZ.28, ZZ.44.

Porto Ercole, Grotta Azzurra, depth 6-12 m, superficial cave, diver, September 1963. R.N. 575.

Porto Ercole, Isolotto, depth 6-10 m, underwater cave, diver, September 1962. R.N.501.

Portofino, S. Fruttuoso, depth 10 m, rock, diver, 20 September 1963. R.N. PF.106.

Description. (Fig. 71) All the specimens are massive, up to 11 cm across, with rounded or conical eminences bearing at their summit an oscule 2 to 10 mm wide. The surface is characteristically adhesive to the touch. The consistency is compact, inelastic and crumbling. The colour of the living sponge is from light orange-yellow to orange-red (some field notations are: c.c.186, 196, 248, 249, 250, 256). Preserved, its colour is light brown.

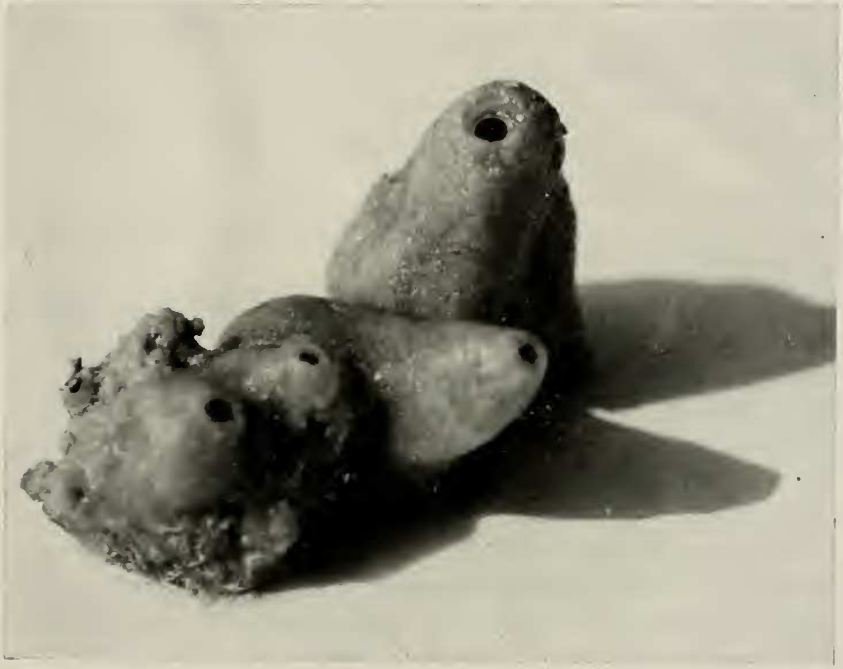

Fig. 71 - Specimens of *Reniera sarai* (fresh). x 0.5.

Specimens PTR.H.25 and PTR.I.3 were found on the back of the crab *Dromia vulgaris* Milne Edw.

Spicules. Oxeas curved, sometimes not quite evenly, points sharp. Size in µm:

PTR: 112-182 x 4-5.4
LI: 160-200 x 6.5
PF: 126-177 x 4.7
ZZ: 120-185 x 5.4
501: 123-190 x 5.4
SAL: 134-161 x 4
GAR: 134-174 x 4-4.7

Reniera implexa Schmidt

Reniera implexa Schmidt, 1868: 27

Occurrence. Off Calvi, depth 135 m, detrital, trawl, 17 July 1975. R.N. NIS.21.1.

Description. The specimen consists of several cylindrical fragments 5-7 mm in diameter. There are a few lateral oscules 1 to 2 mm wide. The surface is microscopically hispid. The ectosome is not separable. The consistency is soft, the colour (in spirit) middle brown.

Spicules. Oxeas slightly curved, points long and sharp, measuring 120-149 x 2.3-4.6 µm.

Reniera perlucida Griessinger

Reniera perlucida Griessinger, 1971: 127

Occurrence. Porto Cesareo, lagoon, depth 0.5-1 m, sand and rocks, 24 September 1971. R.N. PC.74.

Description. (Fig. 72) Various specimens are available, massive to cushion-shaped, the largest measuring 5 x 2.5 x 2.5 cm. Preserved in formalin, their consistency is firm but very friable, the colour is dull light orange (it was dull greyish violet in life). The choanosome is cavernous. A pseudocortex partly detachable, hyaline, delimits numerous and wide vestibular spaces. Only a few oscules can be observed, 1.5 to 4 mm wide, with elevated rim.

The skeletal structure, both ectosomal and choanosomal, is a reticulation of oxeas forming triangular to quadrangular meshes, with spongin at the nodes. Main tracts, paucispicular, are scarcely evident.

Spicules. Oxeas very uniform in shape and size, slightly curved to straight, points short and sharp, measuring 150-180 x 8-10 µm.

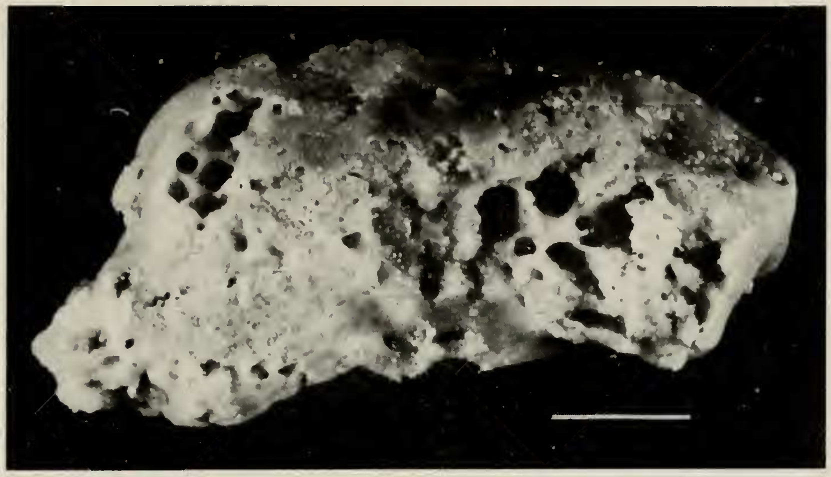

Fig. 72 - A specimen of *Reniera perlucida* (in spirit). Scale: 1 cm.

Reniera cratera Schmidt

Reniera cratera Schmidt, 1862: 73

Occurrence. Tremiti Islands, S. Domino, Cala Tonda, depth 2-3 m, superficial cave, diver, 5 July 1966. R.N. PTR.D.6, PTR.D.14.

Tremiti Islands, Caprara, Cala Sorrentino, depth 2-3 m, superficial cave, diver, 5 July 1966. R.N. PTR.E.23, PTR.E.25.

Tremiti Islands, S. Nicola, depth 10 m, superficial cave, diver, 21 July 1968. R.N. PTR.G.9.

Tremiti Islands, S. Domino, Grotta delle Viole, depth 3-6 m, superficial cave, diver, 23 July 1968. R.N. PTR.H.18, PTR.H.44.

Crete, Gournia, depth 3-4 m, superficial cave, diver, 20 September 1969. R.N. CRT.18.

Crete, Agio Nicolaos, depth 1 m, superficial cavity, 22 September 1969. R.N. CRT.35, CRT.36.

Dubrovnik, depth 10-20 m, detrital, dredge, 16 July 1967. R.N. DUB.15a.

S. Caterina, depth 1 m, rocky shore, 7 July 1967. R.N. SAL.4.

Leuca E., depth 1-2 m, superficial cavity, 9 July 1967. R.N. SAL.178.

Gallipoli, depth 1-10 m, rocky shore, diver, 17 September 1966. R.N. SAL.206.

Zinzulusa Bay, depth 3-5 m, rocky shore, diver, 8 July 1967. R.N. ZZ.37a, ZZ.39.

Torre Incine, depth 6-15 m, underwater cave, diver, 8 July 1968. R.N. TI.11.

Castellabate, Trentova Point, depth 10 m, rocks, diver, 27 July 1971. R.N. CAB.11a.

Castellabate, Licosa Point, depth 30 m, rocks, diver, 23 July 1971. R.N. CAB.67.

Ponza Island, depth 2-5 m, rocky shore, diver, 5 July 1969. R.N. PZ.7, PZ.24, PZ.27.

Porto Ercole, Isolotto, depth 6-10 m, underwater cave, diver, September 1962. R.N. 505, 507a.

Giannutri Island, Spalmatoi, depth 3-6 m, underwater cave, diver, September 1962. R.N. 512.

Porto Ercole, Grotta Azzurra, depth 3-8 m, superficial cave, diver, September 1962. R.N. 524.

Porto Ercole, Isolotto, depth 1-2 m, rocky shore, August 1964. R.N. 612.

Panarea, depth 1-4 m, rocky shore, diver, 15 August 1971. R.N. PAN.48, PAN.50.

Portofino, S. Fruttuoso, depth 10 m, rock, diver, 25 September 1964. R.N. PF.79a.

Recco, depth 14-20 m, conglomerates, diver, August 1970. R.N. PF.291.

Capraia Island, depth 15 m, boulders, diver, 24 September 1964. R.N. CPR.2.

Torre a Mare, depth 12-15 m, conglomerates, diver, 25-27 September 1967. R.N. COR.2.

Torre a Mare, depth 15 m, conglomerates, diver, 30 September 1970. R.N. COR.201.

Porto Tricase, depth 15 m, conglomerates, dredge, 22 September 1970. R.N. TRI.111.

Porto Tricase, depth 25 m, conglomerates, diver, 16 November 1967. R.N. TRI.41.

Castro Marina, depth 25-35 m, conglomerates, dredge, 2 February 1968. R.N. TRI.82.

Description. The sponge is irregularly cushion-shaped, with large oscules on prominences or on short tubular processes. It may widely spread on cave walls. The consistency is mostly soft and fragile, but some specimens are rather firm. Generally a large amount of slime is given off. The colour of the living sponge may vary from red to orange to pink; some colour notations are: C.C.249, 168, 182. In spirit, it is cream to light brown.

The sponge often grows on *Ircinia* species; specimens CAB.11a, DUB.15a, ZZ.37a, PTR.H.44 were found on *Spongosorites flavus* sp. n.

Spicules. Strongyles slightly curved, measuring 200-330 x 7.5-19 μm.

Reniera fulva Topsent

Reniera fulva Topsent, 1893: XXXIX

Reniera fulva: Griessinger, 1971: 138

Occurrence. Riva Trigoso, depth 30 m, boulders, diver, November 1970. R.N. PF.273.

Portofino, Aurora, depth 20-30 m, rock, diver, October 1962. R.N. PF.108.

Portofino, Lighthouse, depth 10-20 m, rock, diver, 23 September 1963. R.N. PF.109.

Torre Incine, depth 6-15 m, underwater cave, diver, 8 July 1968. R.N. TI.3.

Zinzulusa Bay, depth 5 m, rock, diver, 8 July 1967. R.N. ZZ.33.

Tremiti Islands, S. Domino, Punta Provvidenza, depth 9-12 m, underwater cave, diver, July 1966. R.N. PTR.F.13.

Tremiti Islands, S. Domino, Grotta delle Viole, depth 6-8 m, superficial cave, diver, 23 July 1968. R.N. PTR.H.17.

Porto Tricase, depth 25 m, conglomerates, dredge, 16 November 1967. R.N. TRI.54.

Porto Tricase, depth 30 m, conglomerates, diver, 24 September 1970. R.N. TRI.175.

Gallipoli, depth 5 m, superficial cave, diver, 17 September 1966. R.N. SAL.193.

Description. The colour in life has been noted for most specimens: orange to orange-red, C.C.168, 181, 196. In the preserved state the colour is cream to yellowish.

Spicules. Oxeas curved, often irregularly. The smaller sizes are not frequent. Sizes in μm:

PF.273: 225-286 x 5-8
PF.108: 145-280 x 5-8
PF.109: 140-270 x 3.5-6.7
TI.3: 135-280 x 4.5-8
ZZ.33: 135-297 x 5-7.4

PTR.H.17: 150-290 x 5-8
PTR.F.13: 120-280 x 5.5-9.3
TRI.54: 240-280 x 4-6.7
TRI.175: 135-280 x 4-7.4
SAL.193: 220-280 x 3-8

Reniera mucosa Griessinger

Reniera mucosa Griessinger, 1971: 142

Occurrence. Tremiti Islands, S. Domino, Grotta delle Viole, depth 3-6 m, superficial cave, diver, 13 September 1971. R.N. PTR.K.2.

Tremiti Islands, S. Nicola, Grotta Testa di Morte, depth 10 m, superficial cave, diver, 21 July 1968. R.N. PTR.G.13, PTR.G.12.

Tremiti Islands, S. Domino, Grotta delle Viole, depth 4-7 m, diver, 26 July 1968. R.N. PTR.H.37.

Tremiti Islands, S. Domino, Punta Diamante, depth 2-4 m, superficial cave, diver, 5 July 1966. R.N. PTR.C.2, PTR.C.5.

Tremiti Islands, Caprara, Cala Sorrentino, depth 2-3 m, superficial cave, diver, 5 July 1966. R.N. PTR.E.13.

Torre Incine, depth 6-15 m, underwater cave, diver, 8 July 1968. R.N. TI.4, TI.6.

Giannutri Island, depth 3-6 m, superficial cave, diver, September 1962. R.N. 504.

Porto Ercole, Grotta Azzurra, depth 8-12 m, superficial cave, diver, 5 September 1963. R.N. 594.

Portofino, S. Fruttuoso, depth 10 m, underwater cave, 14 October 1963. R.N. PF.104.

Description. The specimens are cushion-shaped, up to 4 cm across. They were noted as soft, fragile, emitting a large quantity of mucus in life, of variable colour: cream-brown, light orange, yellowish or orange-pink. After preservation the colour is middle brown.

Specimens PTR.C.2, PTR.C.5, PTR.E.13 and TI.6 were found on *Cacospongia proficens*, TI.4 on *Ircinia variabilis*. The characteristic emission of long thin processes was noted for specimens PTR.K.2, PTR.G.12, TI.4 and PF.104.

Spicules. Oxeas curved, rather irregular. Sizes in μm:

PTR.K.2: 108-248 x 3-5.5
PTR.G.13: 113-243 x 3-5.5
PTR.H.37: 102-243 x 3.5-5.5

PTR.C.2: 113-253 x 3.5-6.7
PTR.C.5: 113-264 x 2.7-6.7
PTR.E.13: 124-243 x 2.7-6.7

PTR.G.12: 135-231 x 3.5-6
TI.4: 130-240 x 2.7-6
TI.6: 129-259 x 2.7-6.7
504: 124-232 x 2.7-5.4
594: 113-243 x 3-6.7
PF.104: 108-237 x 2.7-5.5

Gellius (?) sp.

Occurrence. Porto Tricase, depth 60 m, detrital, trammel, 24 September 1970. R.N. TRI.265.

Description. (Fig. 73) The sponge (dry) is a very small, membraneous encrustation on debris. Its skeletal structure cannot be ascertained.

Spicules. 1) Oxeas curved, with a remarkably uniform length of 180-200 μm, 4.5-7 μm thick. 2) Microxeas straight, fusiform, with sharp points, 28-31 μm long, less than 1 μm thick, abundant.

Remarks. This specimen, although inadequate, is here recorded because of its unusual spiculation. *Gellius microxifer* Topsent (1925b: 707) differs for the size of both its oxeas and microxeas; it further possesses sigmas, which are here absent. The haplosclerid genus *Microxina* Topsent (1916: 170), with oxeas and microxeas, has been recorded only from the Antarctic.

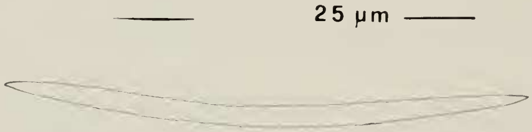

Fig. 73 - Spicules of *Gellius* (?) sp.

ADOCIIDAE

Adocia reptans Griessinger

Adocia reptans Griessinger, 1971: 159

Occurrence. Porto Ercole, Isolotto, depth 0.3 m, superficial cavity, 9 September 1963. R.N. 557.

Description. Several fragments (or individuals?) are available of a small, repent, irregularly lobate sponge. Their size does not exceed 1 cm, and the lobes measure 3-4 mm. The oscules, most on the top of the lobes, are about 1 mm wide. The colour in life was noted as yellowish. In the present dry state the colour is light buff, the consistency fragile.

The ectosomal skeleton is a tangential network of single oxeas. The choanosomal primary lines are paucispicular, spongin is scarce.

Spicules. Oxeas slightly curved, with short and sharp points (but stylote or strongylote modifications are present), measuring 70-108 x 2.7-8 μm.

Adocia cribrata sp. n.

Occurrence. Panarea, depth 3 m, rocky shore, diver, 15 August 1971. R.N. PAN.21, PAN.54.

Holotype (PAN.54), MSNG 47182.

Paratypes (PAN.21, various fragments). MSNG 47183.

Description. (Fig. 74, 75) Numerous fragments of various individuals are available, the largest about 10 cm^2 wide. The sponge is

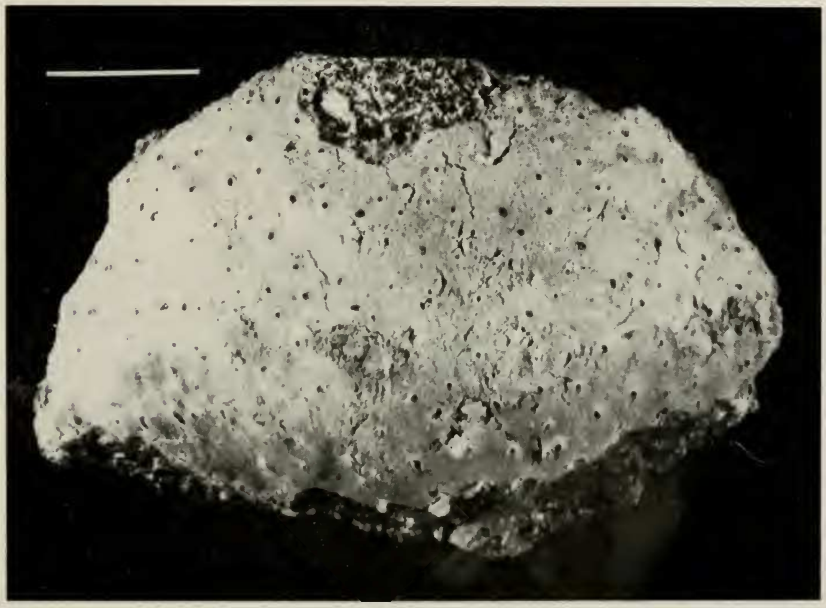

Fig. 74 - The holotype of *Adocia cribrata* sp. n. (dry). Scale: 1 cm.

evenly encrusting on smooth volcanic rock, with a uniform thickness of 1 to 2 mm, devoid of any outgrowth or irregularity. Oscules uniformly 0.4-0.7 mm wide (in the dried state) with markedly elevated rim, 2 to 5 mm apart, give to the surface a very peculiar aspect. The consistency is fragile. The colour in life was greyish azure to yellowish; it is now reddish brown (about C.C.134).

The ectosomal skeleton, quite distinct, is a tangential unispicular reticulation forming meshes irregularly triangular, with no apparent spongin. The main tracts of the choanosomal skeleton are paucispicular, with single connecting spicules rather irregularly disposed. Spongin is scarce.

Spicules. Oxeas slightly curved, with generally elongate and sharp points, measuring for the most part 60-100 x 2.5-4.5 µm. There are also oxeas of the same type, measuring 130-170 µm, same thickness. They are not frequent, but appear proper.

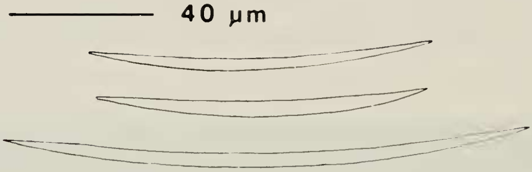

Fig. 75 - Spicules of *Adocia cribrata* sp. n.

Orina angulata (Bowerbank)

Halichondria angulata Bowerbank, 1866: 233

Occurrence. Portofino, Vessinaro, depth 50 m, detrital, boulders, trammel, 4 April 1965. R.N. PF.23.

Portofino, Altare, depth 50-70 m, detrital, boulders, trammel, 18 September 1965. R.N. PF.76.

Riva Trigoso, depth 33 m, boulders, diver, 30 October 1970. R.N. PF.157, PF.173, PF.176.

Bari, depth 15 m, conglomerates, dredge, 17 June 1970. R.N. COR.97.

Porto Tricase, depth 23 m, conglomerates, dredge, 18 October 1967. R.N. TRI.26.

Porto Tricase, depth 15-30 m, conglomerates, diver, 22-24 September 1970. R.N. TRI.102, TRI.180.

Description. All the specimens, very small, have been entirely used for spicule preparations. According to field notes, they were soft, viscous, from cream to light brown, often with digitate processes.

Spicules. 1) Oxeas curved, points sharp, 250-325 x 4.5-9.5 µm. 2) Toxas angulated, 40-63 µm. 3) Sigmas 11-15 µm.

Orina sp.

Occurrence. Riva Trigoso, depth 32-33 m, boulders, diver, 30 October 1970. R.N. PF.164.
Recco, depth 14-20 m, conglomerates, diver, August 1970. R.N. PF.283.

Description. (Fig. 76) Encrusting, soft and fragile, cream in life. The specimens were too small for ascertaining the skeletal structure. Only spicule slides are available.

Spicules. 1) Oxeas moderately curved, points sharp, measuring 100-160 x 2.5-4.5 µm. 2) Toxas very thin, with a chord of 65-111 µm. 3) Sigmas thin, with a chord of 9-14 µm.

Remarks. The specimens are remarkable for the small size and slenderness of their oxeas. They might belong to *Orina rava* (Stephens, 1912: 22), hitherto known only from the Irish seas.

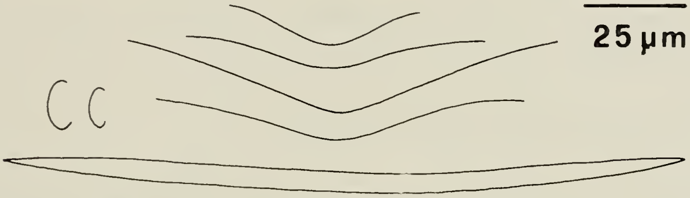

Fig. 76 - Spicules of *Orina* sp.

Sigmadocia flagellifer (Ridley & Dendy)

Gellius flagellifer Ridley & Dendy, 1886: 333

Occurrence. Off Calvi, depth 128-135 m, detrital, dredge and trawl, 18 July 1975. R.N. NIS.4.2, NIS.4.10, NIS.9, NIS.19.9, NIS.11.2, NIS.12.1, NIS.21.5a.
Off Calvi, depth 121-149 m, detrital, dredge, 14-15 July 1969. R.N. NIS.87.1, NIS.87.12, NIS.87.22, NIS.85.6.

Description. All the specimens are fragments, soft and fragile.

Spicules. 1) Oxeas curved, with sharp points, measuring 310-370 x 11-14 µm. 2) Sigmas C-shaped, with a chord of 28-84 µm. 3) Sigmas flagellate, with a chord of 28-140 µm. Size and shape of the spicules of the various specimens are markedly uniform.

NIPHATIDAE

Gelliodes fibulata (Schmidt)

Reniera fibulata Schmidt, 1862: 73

Occurrence. Porto Tricase, depth 60 m, detrital, trammel, 24 September 1970. R.N. TRI.248.

Description. The specimen, dry, is small, fragmented, fragile, light brown. It was cushion-shaped, cream-yellow in life. The skeleton is fibrous; ectosomal protruding fibres are recognizable.

Spicules. 1) Oxeas curved, measuring 220-250 x 9-14 μm. 2) Sigmas thin, with a chord of 14-19 μm, abundant.

PETROSIIDA

PETROSIIDAE

Petrosia ficiformis (Poiret)

Spongia ficiformis Poiret, 1789: 61

Occurrence. Porto Tricase, depth 23 m, conglomerates, dredge, 18 October 1967. R.N. TRI.27.

Porto Tricase, depth 25 m, conglomerates, dredge, 16 November 1967. R.N. TRI.44.

Porto Tricase, depth 15-30 m, conglomerates, diver, 22 September 1970. R.N. TRI.114, TRI.139, TRI.140, TRI.149, TRI.176.

Castro Marina, depth 25-35 m, conglomerates, dredge, 2 February 1968. R.N. TRI.61.

Torre a Mare, depth 30 m, conglomerates, diver, 22 June 1970. R.N. COR.158.

Palese (Bari), depth 30 m, conglomerates, dredge, 23 June 1970. R.N. COR.166.

S. Caterina, depth 5 m, rocky shore, diver, 7 July 1967. R.N. SAL.6.

Leuca W., depth 0.5-1 m, superficial cave, 10 July 1967. R.N. SAL.116, SAL.140.

Leuca E., depth 0.5-1 m, superficial cave, 9 July 1967. R.N. SAL.165.

Leuca W., depth 0.5 m, superficial cave, 22 September 1970. R.N. SAL.233.

Zinzulusa Bay, depth 2-5 m, rocky shore, diver, 8 July 1967. R.N. ZZ.18.

La Spezia, Torre Scuola, depth 2-4 m, rocks and mud, diver, 5 August 1966. R.N. SP.4.

Dubrovnik, depth 2-5 m, rocky shore, diver, 16 July 1967. R.N. DUB.9.

Gargano, Baia di Campi, depth 2-5 m, rocks and mud, diver, 15-21 September 1971. R.N. GAR.64a, GAR.64b, GAR.64c, GAR.64d.

Gargano, Baia di Campi, depth 2-10 m, rocks and mud, diver, 4-5 October 1967. R.N. GAR.28.

Panarea, depth 1-4 m, rocky shore, diver, 15 August 1971. R.N. PAN.35.

Crete, Gournia, depth 2-5 m, superficial cave, diver, 20 September 1969. R.N. CRT.10.

Crete, Agio Nicolaos, depth 0.5-1 m, superficial cavity, 22 September 1969. R.N. CRT.24, CRT.37, CRT.43.

Ponza, depth 0-5 m, rocky shore, diver, 5 July 1969. R.N. PZ.8.

Porto Ercole, depth 4-5 m, rocky shore, diver, September 1962. R.N. 537.

Porto Ercole, Isolotto, depth 0-0.2 m, superficial cavity, 9 September 1963. R.N. 558.

Porto Ercole, depth 1 m, rocky shore, 30 August 1963. R.N. 608.
Porto Ercole, depth 6-12 m, superficial cave, diver, 5 September 1963. R.N.589.

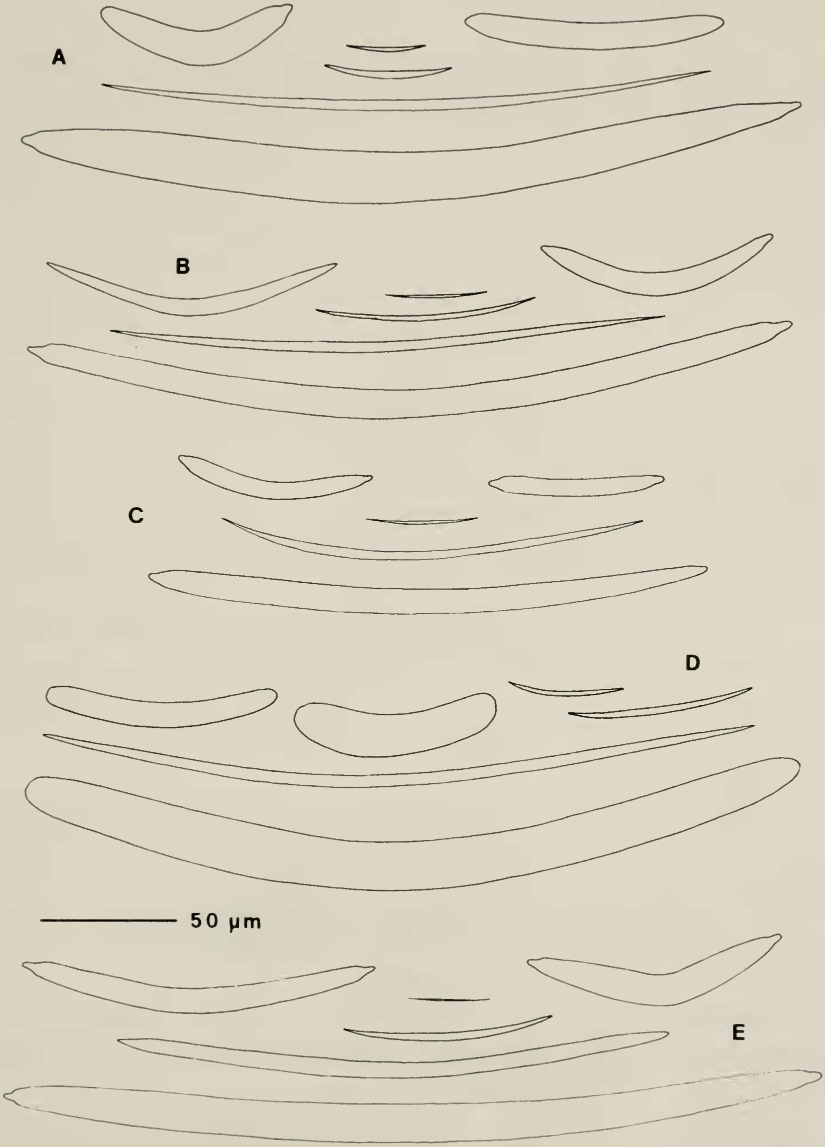

Fig. 77 - Spicules of *Petrosia ficiformis*. A: 537, B: PF.7, C: PZ.8, D: CRT.37, E: NIS. 65.3.

Portofino, Altare, depth 45-50 m, boulders, trammel, 30 March-4 April 1965. R.N. PF.7, PF.18.

Portofino, Olivetta, depth 3-20 m, rocks and detrital, diver, 22 June 1965. R.N. PF.46, PF.358.

Between Cap Ferrat and Cap d'Ail, depth 76 m, detrital, dredge, 15 September 1971. R.N. NIS.65.3, NIS.65.16.

Spicules. (Fig. 77) Oxeas to strongyles, not separable in categories. The largest spicules are in most cases oxeas, isodiametric with short points, reaching in average 260 x 12 μm. Not often, they may be in part transformed into styles and strongyles (specimen SAL.6) or may be almost entirely substituted by pure strongyles (specimens CRT). In these cases the thickness may reach 20 and 25 μm. The smallest oxeas measure about 30-50 μm. There are intermediates of various forms and in variable proportions; typical are short, thickened oxeas or strongyles curved or sharply bent, often sausage-shaped or reniform, always present.

Petrosia clavata (Esper)

Spongia clavata Esper, 1794: 226
Spongia clavata: Ehlers, 1870: 12
Petrosia ficiformis clavata: Topsent, 1934b: 88

Occurrence. Portofino, Lighthouse, depth 50 m, mud and rocks, diver, July 1975. R.N. PF.442.

Description. (Fig. 78) The specimen is massive, globose, with narrower base of attachment, measuring 5 x 4 x 4 cm, bearing on the upper surface three oscules 2-3 mm wide. Aspect, consistency, skeletal frame do not distinguish it from typical specimens of *Petrosia ficiformis*.

The ectosomal skeleton is a network of plurispicular tracts about 50 μm thick forming roundish meshes about 90 μm wide. Scattered spicules are also present. The choanosomal skeletal frame is a reticulation of plurispicular dense tracts about 150 μm thick, forming roundish meshes about 380 μm wide. This network is quite distinct, in spite of the presence of many scattered spicules.

Spicules. Oxeas moderately curved, of uniform shape, not separable in categories, measuring 65 x 1 μm to 210 x 7 μm. Most of them are in a range of 140-200 μm by 4.5-6 μm.

Remarks. I should refer to this species two specimens, z.70/60.2 and z.26.1, which I have recorded from the Bay of Naples (1978: 79), with some reserve, as *Petrosia dura* (= *ficiformis*). Their spicules were pure oxeas measuring 45-230 x 1.5-6.7 µm, thus closely agreeing with those of the specimen in the present collection.

These three specimens, characterized by the size and shape of their oxeas and by the total lack of the short and thick oxeas or strongyles typical of *Petrosia ficiformis*, appear to me specifically distinct. Their attribution to *Petrosia clavata*, a species generally synonymized with *P. ficiformis*, is based on the redescriptions by EHLERS (1870: 12) and by TOPSENT (1934b: 88).

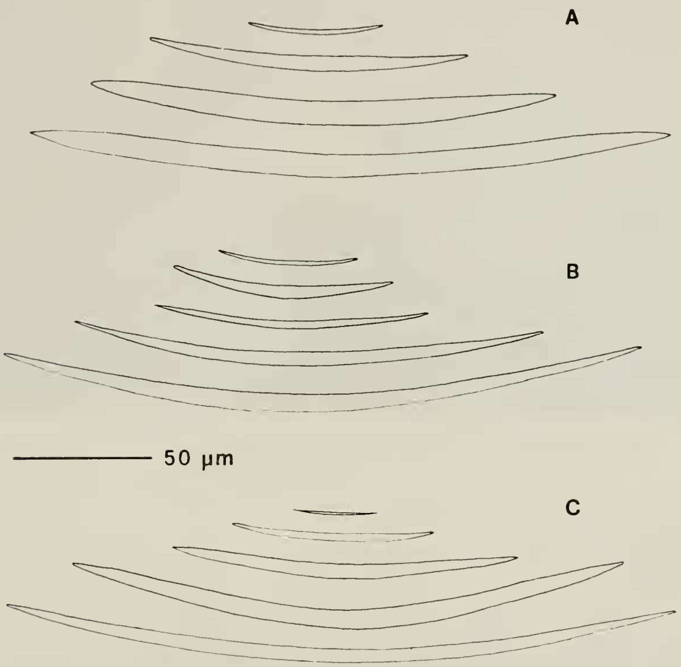

Fig. 78 - Spicules of *Petrosia clavata*. A: PF.442, B: Z.70/60.2, C: Z.26.1.

OCEANAPIIDAE

Pellina semitubulosa (Lieberkühn)

Halichondria semitubulosa Lieberkühn, 1859: 363

Occurrence. Tremiti Islands, S. Domino, Punta Provvidenza, depth 9-12 m, underwater cave, diver, July 1966. R.N. PTR.F.17.

Tremiti Islands, S. Domino, Grotta delle Viole, depth 2-4 m, superficial cave, diver, 23 July 1968. R.N. PTR.H.19, PTR.H.29.

Gallipoli, depth 1-10 m, rocky shore, September 1966. R.N. SAL.197.

Porto Ercole, Isolotto, 0-2 m, rocky shore, September 1962. R.N. 502, 564.

Tremiti Islands, S. Domino, Punta Diamante, depth 2-3 m, superficial cave, diver, 5 July 1966. R.N. PTR.C.7.

Description. PTR.F.17 is massive, 7 x 7 x 3 cm, with a few broken fistules. Specimen 502 consists of long, partly anostomosing fistules starting from a massive base. The other specimens are represented by broken fistules. The colour in life was from whitish to various shades of mauve. The consistency is compressible, very fragile.

Spicules. 1) Oxeas slightly curved, not quite evenly, measuring 145-180 x 4-6.5 µm, points short and sharp. 2) Oxeas measuring 59-75 µm by about 2.5 µm, less frequent. Some intermediates are present.

Pellina fistulosa (Bowerbank)

Isodictya fistulosa Bowerbank, 1866: 299

Occurrence. Leuca W., depth 0-0.5 m, rocky shore, superficial cavity, 10 July 1967. R.N. SAL.143, SAL.135, SAL.129.

Taranto, Mar Piccolo, depth 0.5 m, detrital, 20 September 1971. R.N. PC.131.

Description. The specimens consist of very small, whitish, hyaline fistular processes. Those marked SAL were entirely used for preparations.

Spicules. Oxeas measuring 100-140 x 5.5-7 µm.

Pachypellina parietalis (Topsent)

Reniera parietalis Topsent, 1893: XXXIX

Rhizochalina parietalis: Topsent & Olivier, 1943: 3

Pellina parietalis: Griessinger, 1971: 151

Occurrence. Tremiti Islands, S. Domino, Grotta delle Viole, depth 3-5 m, superficial cave, diver, 23 July 1968. R.N. PTR.H.16.

Tremiti Islands, S. Nicola, Grotta Testa di Morte, depth 4 m, superficial cave, diver, 21 July 1968. R.N. PTR.G.2.

Description. (Fig. 79) PTR.H.16 appeared as irregularly massive, covering about 40 cm^2. Its surface, with the exception of the areas around the oscules, was brown, covered by various impurities; its consistency was firm and brittle. Broken from the substratum, it revealed ample and irregular internal cavities and its proper colour as cream-white. Presently in the dry state, a fragment measuring 5 x 4 x 2 cm is available. The consistency is compressible, inelastic, brittle; the colour is milk-white.

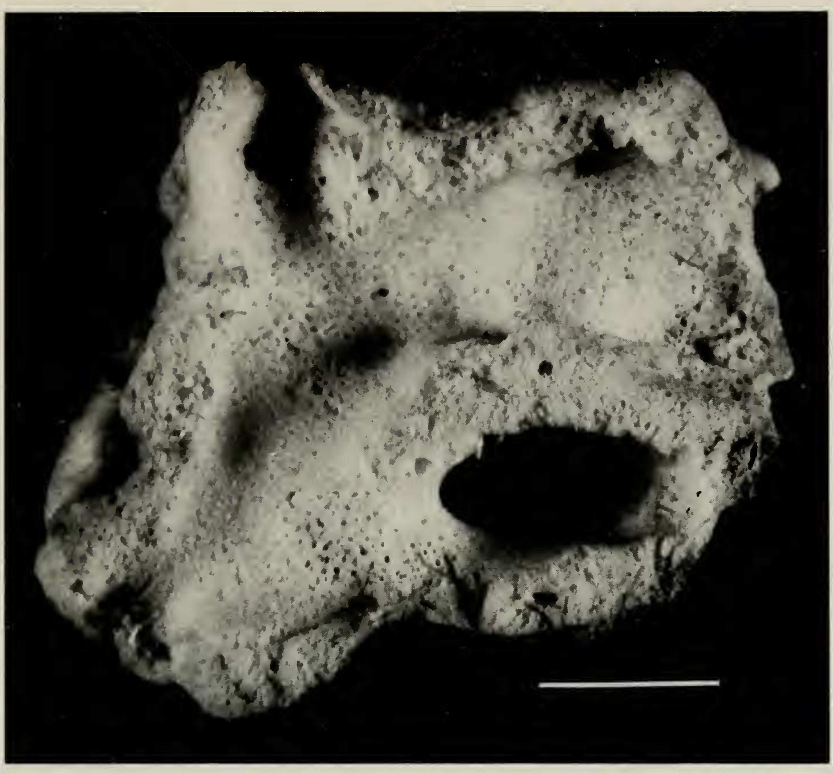

Fig. 79 - *Pachypellina parietalis*, specimen PTR.H.16 (dry). Scale: 2 cm.

PTR.G.2 in the living state was rather hard, white with brownish spots, hollow. A fragment in formalin is now available, white, firm but friable, a convex lamina 2.5 x 3 cm wide, about 4 mm thick.

The outer surface of PTR.H.16 is heavily encrusted by extraneous matter, mainly by the bryozoan *Escharina vulgaris* (Moll); the convex surface of PTR.G.2 is clean, smooth, compact. There are several round oscules 1.5-3 mm wide, with traces of a membranaceous lid on the former specimen, none on the latter one. The ectosomal skeleton is a thick hard crust, not detachable, made by single oxeas and ill-defined paucispicular tracts densely intercrossing without order, but arranged mainly tangentially to the surface.

The surface of the inner cavity of PTR.H.16 and of the concave face of PTR.G.2 is smooth, devoid of foreign matter. Through a tangential irregular network made by single oxeas and some vague paucispicular tracts, ample close-set vestibular spaces are visible. The choanosomal skeleton is a dense reticulation of single oxeas. Spongin is not apparent.

Spicules. Oxeas slightly curved, often almost straight, points generally short and sharp, measuring 124-156 x 2.7-4 μm.

Remarks. The character of the ectosomal skeleton corresponds closely to the diagnosis of *Pachypellina* Burton (1934b: 18).

Calyx nicaeensis (Risso)

Spongia nicaeensis Risso, 1826: 372

Occurrence. Portofino, S. Fruttuoso, depth 10 m, rock, diver, 25 September 1964. R.N. PF.87.

Portofino, S. Fruttuoso, depth 12 m, rock, diver, 5 October 1961. R.N. PF.115.

Tremiti Islands, S. Domino, Punta Diamante, depth 4 m, superficial cave, diver, 5 July 1966. R.N. PTR.C.11.

Tremiti Islands, S. Domino, Punta Provvidenza, depth 9-12 m, underwater cave, diver, July 1966. R.N. PTR.F.1.

Giannutri Island, Spalmatoi, depth 4-6 m, rock, diver, September 1962. R.N. 510, 549.

Porto Ercole, Isolotto, depth 1 m, rocky shore, 1 September 1963. R.N. 591.

Castro Marina, Zinzulusa Bay, depth 0-0.1 m, rocky shore, 13 September 1965. R.N. ZZ.57.

Description. The specimens are irregularly massive to calyx-shaped. PF.115 consists of a massive base from which conical digitations arise, up to 3 cm high, 1 cm wide at the base. PTR.F.1 consists of two fistular digitations 5 cm high and 0.8 cm in diameter.

The ectosomal skeleton is an isodictyal reticulation of oxeas forming mostly triangular meshes. The characteristic strong choanosomal tracts of oxeas, bound by not overlapping spongin, are up to 300 μm thick.

Spicules. Oxeas curved, measuring 140-210 x 3-9 μm. Numerous smaller oxeas, about 50-80 μm long, are present in few preparations.

INCERTAE SEDIS

Dendrectilla gen. n.

Diagnosis. Haplosclerida with an ectosomal distinct skeleton of mostly dendritic multispicular tracts and a choanosomal skeleton consisting of ill-defined multispicular tracts ascending or occasionally forming an irregular reticulation obscured by densely intercrossing single spicules. Spongin scarce or absent. Spicules: oxeas. Type species: *Dendrectilla tremitensis* sp. n.

Remarks. The skeletal architecture of this sponge does not fit in any haplosclerid family as currently understood.

Dendrectilla tremitensis gen. n., sp. n.

Occurrence. Tremiti Islands, S. Domino, Grotta delle Viole, depth 4-7 m, superficial cave, diver, 23 July 1968. R.N. PTR.H.35.

Holotype. MSNG 47184.

Description. (Fig. 80, 81) The specimen, now in the dry state, is cushion-shaped, 8 mm thick, 3 cm wide. Several oscules, 1 to 2 mm wide, are flush to the surface. The colour is buff (it was cream-white in life). The consistency is weak, fragile. There is a distinct ecto-

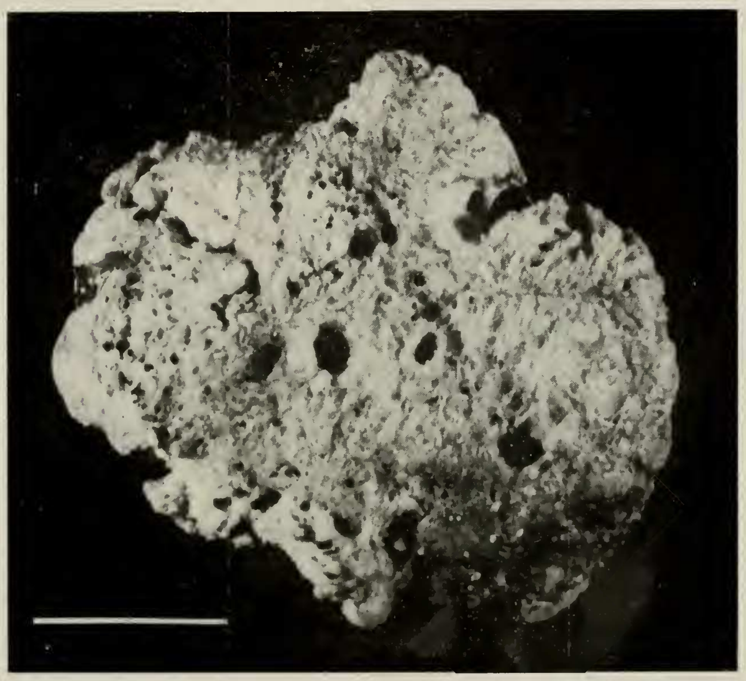

Fig. 80 - *Dendrectilla tremitensis* gen. n., sp. n., the holotype (dry). Scale: 1 cm.

somal membrane covering wide vestibular spaces, supported by tangentially running multispicular rather loose tracts which here and there may form an irregular reticulation but, as a rule, are dendritic and winding, not transversally connected. Spongin is not apparent.

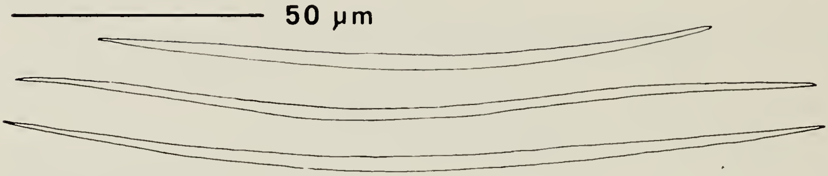

Fig. 81 - Spicules of *Dendrectilla tremitensis* gen. n., sp. n.

The choanosome is lacunose. Its skeleton consists of ill-defined multispicular tracts ascending or occasionally forming an irregular reticulation obscured by densely intercrossing single spicules. Spongin is not apparent.

Spicules. Oxeas slender, slightly curved, often with uneven curvature or slightly sinuous, points elongate and sharp, measuring 124-167 x 2-4 µm.

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INDEX

Aaptos aaptos, 503
aaptos, *Aaptos*, 503
—, *Ancorina*, 503
aberrans, *Desmacella*, 556
—, *Dragmatella*, 556
abyssi, *Pachastrella*, 468
Acanthella acuta, 519
— *obtusa*, 545
Acarnus polytylus, 574
Aciculites incrustans, 481
aculeata, *Halichondria*, 530
—, *Raspaciona*, 530
acuta, *Acanthella*, 519
Adocia cribrata, 583
— *reptans*, 582
ADOCIIDAE, 582
Agelas oroides, 534
AGELASIDAE, 534
agulhana, *Stelletta*, 455
Alcyonium aurantium, 504
— *cranium*, 477
— *cydonium*, 457
— *domuncula*, 483
— *epiphytum*, 485
Alectona millari, 481, 500
— *wallichi*, 502
amygdaoides, *Pachastrella*, 471
—, *Poecillastra*, 471
Anchinoe fictitius, 564
— *mercator*, 565
— *paupertas*, 564
— *tenacior*, 566
ANCHINOIDAE, 564
Ancorina aaptos, 503
— *hipisda*, 452
angulata, *Halichondria*, 584
—, *Orina*, 584
anhelans, *Halichondria*, 561
—, *Tedania*, 561
annulata, *Sphinctrella*, 471
—, *Stellettinopsis*, 471
—, *Tisiphonia*, 471
anonyma, *Samus*, 480
Antho involvens, 567
argus, *Cliona*, 499
armata, *Microciona*, 573
—, *Poecillastra*, 472
aruensis, *Stelletta*, 455
ASTROPHORIDA, 452
Auletta pedunculata, 521
aurantiaca, *Halichondria*, 537
—, *Reniera*, 537
aurantium, *Alcyonium*, 504
—, *Tethya*, 504
australiensis, *Cinachyra*, 479
Axinella cannabina, 516
— *damicornis*, 515
— *minuta*, 517
— *pedunculata*, 521
— *polypoides*, 516
— sp. A, 517
— sp. B, 518
— sp. C, 519
— *verrucosa*, 516
AXINELLIDA, 515
AXINELLIDAE, 515

BIEMNIDAE, 555
bifidostellata, *Timea*, 510
bistellata, *Diplastrella*, 511
—, *Tethya*, 511
bowerbanki, *Corticium*, 449, 452
BUBARIDAE, 523
Bubaris carcisis, 524
— *subtyla*, 524
— *vermiculata*, 523
Bubaropsis, 527
bursa, *Weberella*, 488

Cacospongia proficens, 581
Calthropella geodioides, 466
— *inopinata*, 464
— *pathologica*, 467
— *simplex*, 466, 467
CALTHROPELLIDAE, 464
Calyx nicaeensis, 592
Caminus vulcani, 458
candelabrum, *Corticium*, 448
cannabina, *Axinella*, 516
—, *Spongia*, 516
carcisis, *Bubaris*, 524
carnosa, *Halichondria*, 483
carnosus, *Suberites*, 483
cavernosa, *Chrotella*, 479, 480
—, *Damiria*, 560
—, *Damiriella*, 560
celata, *Cliona*, 494
CERACTINOMORPHA, 536
Ceratopsion clavata, 520
— *microxephora*, 520
— *minor*, 520
Ceratopsis, 520
Characella, 473
chilensis, *Cliona*, 499
Chondrilla nucula, 506
chondrilloides, *Timea*, 510
Chondrosia reniformis, 506
CHONDROSIIDAE, 506
Chrotella cavernosa, 479, 480
Cinachyra australiensis, 479
— *tarentina*, 477

Cinachyrella, 480
cinachyroides, Tetilla, 480
citrina, Tethya, 504
Clathria coralloides, 568
— *marissuperi*, 569
— *oroides*, 534
— *pelligera*, 545
— *plurityla*, 571
— *toxistyla*, 569
— *toxitenuis*, 573
— *toxivaria*, 568
Clathriidae, 567
clavata, Ceratopsion, 520
—, *Petrosia*, 588
—, *Petrosia ficiformis*, 588
—, *Spongia*, 588
Cliona argus, 499
— *celata*, 494
— *chilensis*, 499
— *cretensis*, 498
— *labyrinthica*, 495
— *rhodensis*, 496
— *schmidti*, 481, 495
— sp. 1, 499
— sp. 2, 500
— *vastifica*, 495
— *vermifera*, 496
— *viridis*, 494
— *thoosina*, 499
Clionidae, 494
Cliothosa hancocki, 503
Coelosphaeridae, 556
columella, Desmacidon, 548
—, *Hemimycale*, 548
compressa, Ecionemia, 471
—, *Poecillastra*, 471
conchilega, Geodia, 458
contarenii, Mycale, 552
—, *Spongia*, 552
contorta, Halichondria, 536
—, *Topsentia*, 536
coralloides, Clathria, 568
—, *Spongia*, 568
coronula, Eurypon, 531
—, *Hymeraphia*, 531
corsicus, Erylus, 463
corticata, Latrunculia, 515
Corticium bowerbanki, 449, 452
— *candelabrum*, 448
— *plicatum*, 467
— *reductum*, 450
— *topsenti*, 450
Crambe crambe, 556
crambe, Crambe, 556
—, *Suberites*, 556
Craniella cranium, 477
cranium, Alcyonium, 477
—, *Craniella*, 477
crassa, Hymedesmia hallezi, 508
—, *Timea*, 508
cratera, Reniera, 542, 579
Crella elegans, 559
— *pulvinar*, 559
Crellidae, 558
cretensis, Cliona, 498
cribrata, Adocia, 583
Cribrella elegans, 559
— *hamigera*, 566
cunctatrix, Spirastrella, 493
Cydonium intutum, 459
cydonium, Alcyonium, 457
—, *Geodia*, 457

damicornis, Axinella, 515
—, *Spongia*, 515
Damiria cavernosa, 560
Damiriella cavernosa, 560
decorticans, Placospongia, 507
—, *Physcaphora*, 507
defensa, Stelletta, 454
deficiens, Merlia, 535
delaubenfelsi, Endectyon, 528
Demospongiae, 447
Dendoryx iotrochotina, 561
Dendrectilla, 592
— *tremitensis*, 593
Dercitus plicatus, 467
Desmacella aberrans, 556
— *inornata*, 555
Desmacidon columella, 548
— *emphysema*, 561
— *rotalis*, 553
Desmanthidae, 481
Desmanthus incrustans, 481
Desmoxyidae, 528
dichoclada, Stelletta, 453
Dictyocylindrus rugosus, 521
— *virgultosus*, 530
Dictyonella incisa, 546
— *obtusa*, 545
— *marsillii*, 545
— *pelligera*, 545
Didiscus sp., 513
— *styliferus*, 512
digitifera, Myriastra, 455
Diplastrella bistellata, 511
— *ornata*, 511
discophora, Stelletta, 459
discophorus, Erylus, 459, 460
dives, Microciona, 567
—, *Stylostichon*, 567
domuncula, Alcyonium, 483
—, *Suberites*, 483, 484
Dragmatella aberrans, 556
dura, Petrosia, 588

Ecionemia compressa, 471
elegans, *Crella*, 559
—, *Cribrella*, 559
—, *Haliclona*, 576
—, *Isodictya*, 576
elongata, *Rhizaxinella*, 486
—, *Suberites*, 486
emphysema, *Desmacidon*, 561
—, *Melonanchora*, 561
Endectyon delaubenfelsi, 528
epiphytum, *Alcyonium*, 485
—, *Prosuberites*, 485
Erylus corsicus, 463
— *discophorus*, 459, 460
— *euastrum*, 460
— *expletus*, 463, 464
— *mamillaris*, 460
— *papulifer*, 461, 464
Esperia massa, 552
— *tunicata*, 553
ESPERIOPSIDAE, 556
euastrum, *Erylus*, 460
—, *Stelletta*, 460
Eurypon coronula, 531
— *major*, 531
— *topsenti*, 531
EURYPONIDAE, 531
expletus, *Erylus*, 463, 464

falcula, *Halichondria*, 554
—, *Hamacantha*, 554
fibulata, *Gelliodes*, 586
—, *Reniera*, 586
ficiformis, *Petrosia*, 586
—, *Spongia*, 586
— *clavata*, *Petrosia*, 588
fictitia, *Microciona*, 564
fictitius, *Anchinoe*, 564
ficus, *Suberites*, 484
fistulosa, *Isodictya*, 590
—, *Pellina*, 590
flagellifer, *Gellius*, 585
—, *Sigmadocia*, 585
flavens, *Spongosorites*, 541
freitasi, *Stelletta*, 454
fugax, *Terpios*, 486
fulva, *Reniera*, 580
furtiva, *Holoxea*, 477

Gelliodes fibulata, 586
Gellius flagellifer, 585
— *microxifer*, 582
— sp., 582
Geodia conchilega, 458
— *cydonium*, 457
GEODIIDAE, 457
geodioides, *Calthropella*, 466
gigantea, *Stelletta*, 455
glabra, *Topsentia*, 541
gracilis, *Rhizaxinella*, 486
—, *Sphinctrella*, 469
—, *Suberites*, 486
gracillima, *Raspailia*, 530
Grayella topsenti, 558

HADROMERIDA, 483
Halichondria aculeata, 530
— *angulata*, 584
— *anhelans*, 561
— *aurantiaca*, 537
— *carnosa*, 483
— *contorta*, 536
— *falcula*, 554
— *inornata*, 555
— *intricata*, 540
— *isodictyalis*, 560
— *lingua*, 553
— *rosacea*, 560
— *semitubulosa*, 589
HALICHONDRIDA, 536
HALICHONDRIIDAE, 536
Haliclona elegans, 576
— *subtilis*, 576
HALICLONIDAE, 576
Halicnemia patera, 528
Halisarca lobularis, 447
Hamacantha falcula, 554
— *implicans*, 554
— *johnsoni*, 554
HAMACANTHIDAE, 554
hamigera, *Cribrella*, 566
—, *Hamigera*, 566
Hamigera hamigera, 566
hancocki, *Cliothosa*, 503
—, *Thoosa*, 503
HAPLOSCLERIDA, 576
hebes, *Tethya*, 480
helleri, *Penares*, 456
—, *Stelletta*, 456
HEMIASTERELLIDAE, 528
Hemimycale columella, 548
hispida, *Ancorina*, 452
—, *Stelletta*, 452
Holoxea furtiva, 477
HOMOSCLEROMORPHA, 447
HOMOSCLEROPHORIDA, 447
horrida, *Sphinctrella*, 468
hyalina, *Hymeniacidon*, 484
hyalinus, *Pseudosuberites*, 484
Hymedesmia hallezi crassa, 508
— *johnsoni*, 554
— *lieberkuehni*, 567
— *pansa*, 562
— *peachii*, 562
— *stellata*, 509
— *unistellata*, 509
HYMEDESMIIDAE, 562

Hymeniacidon hyalina, 484
— *paupertas*, 564
— *sanguinea*, 548
— *sulphurea*, 484
HYMENIACIDONIDAE, 545
Hymeraphia coronula, 531
— *vermiculata*, 523
Hymetrichita rectirhaphis, 562
— *rhaphigena*, 564
hystrix, *Pseudotrachia*, 523

implexa, *Reniera*, 578
implicans, *Hamacantha*, 554
implicata, *Rhabdobaris*, 527
incisa, *Dictyonella*, 546
—, *Phakellia*, 546
incrustans, *Aciculites*, 481
—, *Desmanthus*, 481
indica, *Rhabderemia*, 534
Inflatella sp., 558
inopinata, *Calthropella*, 464
inornata, *Desmacella*, 555
—, *Halichondria*, 555
intricata, *Halichondria*, 540
intricatus, *Spongosorites*, 540, 543
intuta, *Isops*, 459
intutum, *Cydonium*, 459
involvens, *Antho*, 567
—, *Myxilla*, 567
iotrochotina, *Dendoryx*, 561
—, *Myxilla*, 561
Ircinia variabilis, 581
Isodictya elegans, 576
— *fistulosa*, 590
isodictyalis, *Halichondria*, 560
—, *Lissodendoryx*, 560
Isops intuta, 459

JASPIDAE, 474
Jaspis johnstonii, 474
— *penetrans*, 475
— sp. 1, 475
— sp. 2, 475
johnsoni, *Hamacantha*, 554
—, *Hymedesmia*, 554
johnstonii, *Jaspis*, 474
—, *Vioa*, 474

labyrinthica, *Cliona*, 495
lactea, *Stelletta*, 452
Laminospongia, 546
— *subtilis*, 546
Latrunculia corticata, 515
— *magnifica*, 515
— *tarentina*, 513
LATRUNCULIIDAE, 512
Laxosuberites rugosus, 484
lieberkuehni, *Hymedesmia*, 567
—, *Stylostichon*, 567
lingua, *Halichondria*, 553
—, *Mycale*, 553
Lissodendoryx isodictyalis, 560
LITHISTIDA, 481
lobularis, *Halisarca*, 447
—, *Oscarella*, 447
longispina, *Prosuberites*, 485

magnifica, *Latrunculia*, 515
major, *Eurypon*, 531
mamillaris, *Erylus*, 460
marissuperi, *Clathria*, 569
marsillii, *Dictyonella*, 545
—, *Stylotella*, 545
massa, *Esperia*, 552
—, *Mycale*, 552
Melonanchora emphysema, 561
mercator, *Anchinoe*, 565
—, *Suberotelites*, 565
Merlia deficiens, 535
— *normani*, 535
MERLIIDA, 535
MERLIIDAE, 535
Microciona armata, 573
— *dives*, 567
— *fictitia*, 564
— *minutula*, 533
— *pusilla*, 533
— *strepsitoxa*, 573
— *toxistyla*, 569
— *toxitenuis*, 573
— *toxivaria*, 568
microxephora, *Ceratopsion*, 520
microxifer, *Gellius*, 582
Microxina, 582
millari, *Alectona*, 481, 500
minor, *Ceratopsion*, 520
minuta, *Axinella*, 517
minutula, *Microciona*, 533
—, *Rhabderemia*, 533
mollis, *Thoosa*, 502
monilifera, *Pachastrella*, 468
Monocrepidium vermiculatum, 526
monolopha, *Plakina*, 447
mucosa, *Reniera*, 581
mucronata, *Stelletta*, 457
mucronatus, *Stryphnus*, 457
muricata, *Tethea*, 474
—, *Thenea*, 474
Mycale contarenii, 552
— *lingua*, 553
— *massa*, 552
— *rotalis*, 553
— *tunicata*, 553
MYCALIDAE, 552
Myriastra digitifera, 455
Myxilla involvens, 567
— *iotrochotina*, 561

Myxilla pulvinar, 559
Myxilla rosacea, 560
Myxillidae, 560

Nethea, 472
nicaeensis, *Calyx*, 592
—, *Spongia*, 592
Niphatidae, 586
normani, *Merlia*, 535
nucula, *Chondrilla*, 506

obtusa, *Acanthella*, 545
—, *Dictyonella*, 545
Oceanapiidae, 589
Orina angulata, 584
— sp., 585
ornata, *Diplastrella*, 511
—, *Sphinctrella*, 471
oroides, *Agelas*, 534
—, *Clathria*, 534
Oscarella lobularis, 447
Oscarellidae, 447
ovisternata, *Pachastrella*, 468
oxystyla, *Pseudotrachya*, 523

Pachastrella abyssi, 468
— *amygdaloides*, 471
— *monilifera*, 468
— *ovisternata*, 468
Pachastrellidae, 467
Pachypellina parietalis, 590
pansa, *Hymedesmia*, 562
papulifer, *Erylus*, 461, 464
parietalis, *Pachypellina*, 590
—, *Pellina*, 590
—, *Reniera*, 590
—, *Rhizochalina*, 590
patera, *Halicnemia*, 528
pathologica, *Calthropella*, 467
paupertas, *Anchinoe*, 564
—, *Hymeniacidon*, 564
peachii, *Hymedesmia*, 562
pedunculata, *Auletta*, 521
—, *Axinella*, 521
pelligera, *Clathria*, 545
—, *Dictyonella*, 545
Pellina fistulosa, 590
— *parietalis*, 590
— *semitubulosa*, 589
Penares helleri, 456
penetrans, *Jaspis*, 475
perlucida, *Reniera*, 578
Petrosia clavata, 588
— *dura*, 588
— *ficiformis*, 586
— — *clavata*, 588
Petrosiida, 586
Petrosiidae, 586

Phakellia incisa, 546
— *rugosa*, 521
Physcaphora decorticans, 507
Placospongia decorticans, 507
Placospongiidae, 507
Plakina monolopha, 447
— *trilopha*, 447
Plakinidae, 447
Plakortis simplex, 448
plicatum, *Corticium*, 467
plicatus, *Dercitus*, 467
plurityla, *Clathria*, 571
poculifera, *Tetilla*, 480
Poecillastra amygdaloides, 471
— *armata*, 472
— *compressa*, 471
— *rudiastra*, 472
Poecilosclerida, 552
Polymastia polytylota, 490, 491
— *sola*, 489
— sp. A, 491
— sp. B, 492
Polymastiidae, 487
polypoides, *Axinella*, 516
polytylota, *Polymastia*, 490, 491
polytylus, *Acarnus*, 574
proficens, *Cacospongia*, 581
Prosuberites epiphytum, 485
— *longispina*, 485
Pseudosuberites hyalinus, 484
— *sulphureus*, 484
Pseudotrachya hystrix, 523
— *oxystyla*, 523
pulvinar, *Crella*, 559
—, *Myxilla*, 559
pumex, *Stelletta*, 453
—, *Tethya*, 453
pusilla, *Microciona*, 533
pyrifera, *Rhizaxinella*, 485
—, *Tethya*, 485

Raspaciona aculeata, 530
Raspailia gracillima, 530
— *syringella*, 483
— *virgultosa*, 530
Raspailiidae, 528
rectirhaphis, *Hymetrichita*, 562
reductum, *Corticium*, 450
Reniera aurantiaca, 537
— *cratera*, 542, 579
— *fibulata*, 586
— *fulva*, 580
— *implexa*, 578
— *mucosa*, 581
— *parietalis*, 590
— *perlucida*, 578
— *sarai*, 576
reniformis, *Chondrosia*, 506

reptans, *Adocia*, 582
Rhabderemia indica, 534
— *minutula*, 533
RHABDEREMIIDAE, 533
Rhabdobaris, 526
— *implicata*, 527
Rhabdoploca, 527
rhaphigena, *Hymetrichita*, 564
Rhaphisia spelaea, 538
Rhizaxinella elongata, 486
— *gracilis*, 486
— *pyrifera*, 485
Rhizochalina parietalis, 590
rhodensis, *Cliona*, 496
rosacea, *Halichondria*, 560
—, *Myxilla*, 560
rotalis, *Desmacidon*, 553
—, *Mycale*, 553
rudiastra, *Poecillastra*, 472
rugosa, *Phakellia*, 521
rugosus, *Dictyocylindrus*, 521
—, *Laxosuberites*, 484
—, *Suberites*, 484

SAMIDAE, 480
Samus anonyma, 480
sanguinea, *Hymeniacidon*, 548
—, *Spongia*, 548
sarai, *Reniera*, 576
schmidti, *Cliona*, 481, 495
—, *Vioa*, 495
semitubulosa, *Halichondria*, 589
—, *Pellina*, 589
Sigmadocia flagellifer, 585
simplex, *Calthropella*, 466, 467
—, *Plakortis*, 448
simplistellata, *Timea*, 509
sola, *Polymastia*, 489
spelaea, *Rhaphisia*, 538
Sphinctrella annulata, 471
— *gracilis*, 468
— *horrida*, 468
— *ornata*, 471
— *verrucolosa*, 470
Spirastrella cunctatrix, 493
SPIRASTRELLIDAE, 493
SPIROPHORIDA, 477
Spongia cannabina, 516
— *clavata*, 588
— *contareni*, 552
— *coralloides*, 568
— *damicornis*, 515
— *ficiformis*, 586
— *nicaeensis*, 592
— *sanguinea*, 548
— *stuposa*, 528, 549
— *verrucosa*, 516
Spongosorites flavens, 541
Spongosorites intricatus, 540, 543
— sp., 543
stellata, *Hymedesmia*, 509
—, *Stelletta*, 453
—, *Timea*, 509
Stelletta agulhana, 455
— *aruensis*, 455
— *defensa*, 454
— *dichoclada*, 453
— *discophora*, 459
— *euastrum*, 460
— *freitasi*, 454
— *gigantea*, 455
— *helleri*, 456
— *hispida*, 452
— *lactea*, 452
— *mucronata*, 457
— *pumex*, 453
— sp., 455
— *stellata*, 453
STELLETTIDAE, 452
Stellettinopsis annulata, 471
Stelligera stuposa, 528
strepsitoxa, *Microciona*, 573
Stryphnus mucronatus, 457
stuposa, *Spongia*, 528, 549
—, *Stelligera*, 528
—, *Ulosa*, 549
styliferus, *Didiscus*, 512
Stylostichon dives, 567
— *lieberkuehni*, 567
Stylotella marsillii, 545
Suberites carnosus, 483
— *crambe*, 556
— *domuncula*, 483, 484
— *elongata*, 486
— *ficus*, 484
— *gracilis*, 486
— *rugosus*, 484
— *syringella*, 483
SUBERITIDAE, 483
Suberotelites mercator, 565
subtilis, *Haliclona*, 576
—, *Laminospongia*, 546
subtyla, *Bubaris*, 524
sulphurea, *Hymeniacidon*, 484
sulphureus, *Pseudosuberites*, 484
syringella, *Raspailia*, 483
—, *Suberites*, 483

tarentina, *Cinachyra*, 477
—, *Latrunculia*, 513
Tedania anhelans, 561
TEDANIIDAE, 561
tenacior, *Anchinoe*, 566
tenellula, *Ulosa*, 549
Terpios fugax, 486
Tethea muricata, 474

Tethya aurantium, 504
— *bistellata*, 511
— *citrina*, 504
— *hebes*, 480
— *pumex*, 453
— *pyrifera*, 485
TETHYIDAE, 503
Tetilla cinachyroides, 480
— *poculifera*, 480
TETILLIDAE, 477
TETRACTINOMORPHA, 452
Thenea muricata, 474
THENEIDAE, 474
Thoosa hancocki, 503
— *mollis*, 502
thoosina, *Cliona*, 499
Timea bifidostellata, 510
— *chondrilloides*, 510
— *crassa*, 508
— *simplistellata*, 509
— *stellata*, 509
— *unistellata*, 509
TIMEIDAE, 508
Tisiphonia annulata, 471
topsenti, *Corticium*, 450
—, *Eurypon*, 531
—, *Grayella*, 558
—, *Yvesia*, 558
Topsentia contorta, 536
— *glabra*, 541
toxistyla, *Clathria*, 569
—, *Microciona*, 569
toxitenuis, *Clathria*, 573
—, *Microciona*, 573
toxivaria, *Clathria*, 568
—, *Microciona*, 568
tremitensis, *Dendrectilla*, 593
trilopha, *Plakina*, 447
tubulata, *Ulosa*, 550
tunicata, *Esperia*, 553
—, *Mycale*, 553

Ulosa stuposa, 549
— *tenellula*, 549
— *tubulata*, 550
unistellata, *Hymedesmia*, 509
—, *Timea*, 509

variabilis, *Ircinia*, 581
vastifica, *Cliona*, 495
vermiculata, *Bubaris*, 523
—, *Hymeraphia*, 523
vermiculatum, *Monocrepidium*, 526
vermifera, *Cliona*, 496
verrucolosa, *Sphinctrella*, 470
verrucosa, *Axinella*, 516
—, *Spongia*, 516
—, *Weberella*, 487
Vioa johnstonii, 474
— *schmidti*, 495
— *viridis*, 494
virgultosa, *Raspailia*, 530
virgultosus, *Dictyocylindrus*, 530
viridis, *Cliona*, 494
—, *Vioa*, 494
vulcani, *Caminus*, 458

wallichii, *Alectona*, 502
Weberella bursa, 488
— *verrucosa*, 487

Yvesia topsenti, 558

APPENDIX

A list of the Demospongiae hitherto recorded from the Mediterranean Sea

The following list is not the result of a complete revision: it contains presumably incorrect identifications or attributions, synonyms, unrecognizable species. As a matter of fact, it may be assumed that between 10 to 20% of the listed entries would be either transferred or cancelled if subjected to revision.

Systematic order and nomenclature are those presently followed by this writer: on some points agreement may not be unanimous.

Citations in brackets are only meant to indicate a useful redescription, or mention of synonyms, or a nomenclatural change.

Oscarellidae
Octavella galangaui Tuzet & Paris 1963
Oscarella lobularis (Schmidt 1862) [Schulze 1877]

Plakinidae
Corticium bowerbanki Sarà 1960a
— *candelabrum* Schmidt 1862 [Topsent 1895]
— *reductum* Pulitzer-Finali 1983 [present paper]
— *topsenti* Pouliquen 1972
Diactinolopha moncharmonti Sarà 1960b
Plakina dilopha Schulze 1880 [Topsent 1895]
— *monolopha* Schulze 1880 [Topsent 1895]
— *trilopha* Schulze 1880 [Topsent 1895]
Plakinastrella copiosa Schulze 1880 [Topsent 1895]
Plakortis simplex Schulze 1880 [Topsent 1895]

Stellettidae
Ancorina radix Marenzeller 1889
— *wageneri* (Schmidt 1862) [Topsent 1945]
Dercitancorina lesinensis (Lendenfeld 1894) [Topsent 1902]
Penares candidata (Schmidt 1868) [Topsent 1894b]
— *helleri* (Schmidt 1864) [Topsent 1894b]
Stelletta addita (Topsent 1938a)
— *defensa* Pulitzer-Finali 1983 [present paper]
— *dichoclada* Pulitzer-Finali 1983 [present paper]
— *dorsigera* Schmidt 1864 [Topsent 1894b]
— *grubii* Schmidt 1862 [Topsent 1894b]
— *hispida* (Buccich 1886) [Topsent 1894b]
— *lactea* Carter 1871 [Topsent 1894b, 1928]
— *mediterranea* (Topsent 1893) [Lendenfeld 1903]
— *pumex* (Nardo 1847a) [Marenzeller 1889]
— *simplicissima* (Schmidt 1868) [Lendenfeld 1894]
— *stellata* Topsent 1893 [Topsent 1894b]
— — *adriatica* Sarà 1960a
Stryphnus mucronatus (Schmidt 1868) [Topsent 1894b]
— *ponderosus* (Bowerbank 1866) [Topsent 1894b]
— — *rudis* (Sollas 1888) [Topsent 1894b]

GEODIIDAE

Caminella loricata Lendenfeld 1894
Caminus vulcani Schmidt 1862 [Topsent 1894b]
Erylus corsicus Pulitzer-Finali 1983 [present paper]
— *deficiens* (Topsent 1927) [Vacelet 1976]
— *discophorus* (Schmidt 1862) [Lendenfeld 1894]
— *euastrum* (Schmidt 1868) [Topsent 1928]
— — *aspidodiscus* Topsent 1928
— *expletus* Topsent 1927 [Pouliquen 1972]
— *mamillaris* (Schmidt 1862) [Pulitzer-Finali 1972]
— *papulifer* Pulitzer-Finali 1983 [present paper]
Geodia conchilega Schmidt 1862 [Lendenfeld 1894]
— *cydonium* (Jameson 1811) [Lendenfeld 1894, Arndt 1934]
— *micropunctata* Row 1911 [Tsurnamal 1969a]
— *tuber* Lendenfeld 1894
Isops anceps (Vosmaer 1894) [Pulitzer-Finali 1972]
— *canaliculata* (Schmidt 1868) [Topsent 1901]
— *intuta* (Topsent 1892b) [Topsent 1894b]
Pachymatisma intermedia (Schmidt 1868) [Lendenfeld 1903]
— *johnstonia* (Bowerbank 1844) [Topsent 1894b]
Sidonops geodina (Schmidt 1868) [Pulitzer-Finali 1978]

CALTHROPELLIDAE

Calthropella inopinata Pulitzer-Finali 1983 [present paper]
— *pathologica* (Schmidt 1868) [Topsent 1938a]
— *recondita* Pulitzer-Finali 1972
— *stelligera* (Schmidt 1868) [Lendenfeld 1903]

PACHASTRELLIDAE

Characella tripodaria (Schmidt 1868) [Topsent 1938a]
Dercitus plicatus (Schmidt 1868) [Topsent 1895]
Nethea dissimilis Sarà 1959
Pachastrella echinorhabda Pulitzer-Finali 1972
— *monilifera* Schmidt 1868 [Topsent 1894b]
Poecillastra amygdaloides (Carter 1876) [Topsent 1895]
— *compressa* (Bowerbank 1866) [Topsent 1894b]
— *rudiastra* Pulitzer-Finali 1983 [present paper]
— *saxicola* (Topsent 1892b) [Topsent 1894b, 1934a]
— *scabra* (Schmidt 1868) [Topsent 1902]
Sphinctrella gracilis Sollas 1888 [Lévi & Vacelet 1958]
— *horrida* Schmidt 1870 [present paper]
— *verrucolosa* Pulitzer-Finali 1983 [present paper]
Triptolemus simplex Sarà 1959

THENEIDAE

Thenea muricata (Bowerbank 1858) [Topsent 1894b]

THROMBIDAE

Thrombus abyssi (Carter 1873) [Topsent 1895]

EPIPOLASIDA

Holoxea furtiva Topsent 1892b [Topsent 1900]
Jaspis inconditus (Topsent 1892b)
— *incrustans* (Topsent 1890) [Topsent 1900]
— *johnstonii* (Schmidt 1862) [Pulitzer Finali 1972]
Raspaigella brunnea Schmidt 1868
Spiroxya heteroclita Topsent 1896 [Topsent 1900]

TETILLIDAE

Cinachyra cavernosa (Lamarck 1815) [Tsurnamal 1969a]
— *tarentina* Pulitzer-Finali 1983 [present paper]

Craniella cranium (Müller 1776) [Arndt 1934]
— *repens* Sarà 1958a

SAMIDAE
Samus anonyma Gray 1867 [Thomas 1973]

LITHISTIDA
Discodermia polydiscus Bocage 1870 [Vacelet 1969]
Corallistes masoni (Bowerbank 1869) [Pouliquen 1972]
Desmanthus incrustans (Topsent 1889) [Pulitzer-Finali 1972]
Siphonidium ramosum (Schmidt 1870) [Topsent 1925b]
Petromica grimaldii Topsent 1898 [Pulitzer-Finali 1972]

SUBERITIDAE
Laxosuberites ectyoninus Topsent 1900
— *rugosus* (Schmidt 1868) [Topsent 1900]
Prosuberites brevispinus Laubenfels 1951
— *epiphytum* (Lamarck 1815) [Arndt 1934]
— *longispina* Topsent 1893 [Topsent 1900]
— *modestus* Pulitzer-Finali 1978
— *rugosus* Topsent 1893 [Topsent 1900]
—*Pseudosuberites hyalinus* (Ridley & Dendy 1887) [Arndt 1934]
— *mollis* Topsent 1925a
— *sulphureus* (Bowerbank 1866) [Arndt 1934]
Rhizaxinella elongata (Ridley & Dendy 1886) [Topsent 1900]
— *gracilis* (Lendenfeld 1896) [Pulitzer-Finali 1978]
— *pyrifera* (Delle Chiaje 1828) [Topsent 1900]
Suberites bursa Schmidt 1862
— *carnosus* (Johnston 1842) [Arndt 1934]
— — *incrustans* Topsent 1900 [Arndt 1934]
— *domuncula* (Olivi 1792) [Pulitzer-Finali 1978]
— *hystrix* Schmidt 1868
— *massa* Nardo 1847 [Lévi 1950]
— *syringella* (Schmidt 1868) [Pulitzer-Finali 1978]
Terpios fugax Duchassaing & Michelotti 1864 [Arndt 1934]

POLYMASTIIDAE
Polymastia inflata Cabioch 1968
— *mamillaris* (Müller 1806) [Arndt 1934]
— *polytylota* Vacelet 1969
— *robusta* (Bowerbank 1861) [Arndt 1934]
— *sola* Pulitzer-Finali 1983 [present paper]
Quasillina brevis (Bowerbank 1861) [Arndt 1934]
Radiella sol Schmidt 1870 [Arndt 1934]
— *tissieri* Vacelet 1961a
Weberella verrucosa Vacelet 1960

SPIRASTRELLIDAE
Spirastrella cunctatrix Schmidt 1868 [Desqueyroux-Faundez 1981]
— *minax* (Topsent 1888a) [Arndt 1934]

CLIONIDAE
Alectona millari Carter 1879 [Arndt 1934]
Cliona albicans Volz 1939
— *burtoni* Topsent 1932
— *celata* Grant 1826 [Arndt 1934]
— *copiosa* Sarà 1959
— *cretensis* Pulitzer-Finali 1983 [present paper]
— *janitrix* Topsent 1932
— *labyrinthica* Hancock 1849 [Volz 1939]
— *levispira* Topsent 1898 [Pouliquen 1972]

Cliona lobata Hancock 1849 [Arndt 1934]
— *nigricans* (Schmidt 1862) [Rützler 1973]
— *pruvoti* Topsent 1900
— *rhodensis* Rützler & Bromley 1981
— *rovignensis* Volz 1939
— *sarai* Melone 1965
— *schmidti* (Ridley 1881) [Rützler 1973]
— *stationis* Nassonow 1883
— *topsenti* (Lendenfeld 1896) [Topsent 1932]
— *tremitensis* Sarà 1961
— *vastifica* Hancock 1849 [Rützler 1973]
— *vermifera* Hancock 1867 [Volz 1939]
— *viridis* (Schmidt 1862) [Rützler 1973]
Cliothosa hancocki (Topsent 1888a) [Rützler 1973]
Thoosa armata Topsent 1888a [Topsent 1918]
— *mollis* Volz 1939

TETHYIDAE

Aaptos aaptos (Schmidt 1864) [Topsent 1900 as *Tuberella a.*]
— *papillata* (Keller 1880) [Topsent 1925b]
Tethya aurantium (Pallas 1766) [Arndt 1934 and present paper]
— *citrina* Sarà & Melone 1965 [present paper]

CHONDROSIIDAE

Chondrilla nucula Schmidt 1862
Chondrosia plebeja Schmidt 1868 [Topsent 1918]
— *reniformis* Nardo 1847b [Arndt 1934]

STYLOCORDYLIDAE

Oxycordyla pellita Topsent 1904 [Vacelet 1969]

PLACOSPONGIIDAE

Placospongia decorticans (Hanitsch 1895) [Vosmaer & Vernhout 1902]

TIMEIDAE

Diplastrella bistellata (Schmidt 1862) [Topsent 1918]
— *ornata* Rützler & Sarà 1962
Timea bifidostellata Pulitzer-Finali 1983 [present paper]
— *chondrilloides* (Topsent 1904) [Vacelet 1969]
— *crassa* (Topsent 1900) [Lévi 1952]
— *cumana* Pulitzer-Finali 1978
— *fasciata* Topsent 1934a
— *geministellata* Pulitzer-Finali 1978
— *irregularis* Sarà & Siribelli 1960
— *mixta* (Topsent 1896) [Topsent 1928]
— *simplistellata* Pulitzer-Finali 1983 [present paper]
— *stellata* (Bowerbank 1866) [Arndt 1934]
— *stellifasciata* Sarà & Siribelli 1960
— *unistellata* (Topsent 1892b) [Topsent 1925b]

LATRUNCULIIDAE

Didiscus styliferus (Tsurnamal 1968) [Tsurnamal 1969a]
Latrunculia citharistae Vacelet 1969
— *insignis* Topsent 1892a [Vacelet 1969]
— *tarentina* Pulitzer-Finali 1983 [present paper]
Podospongia lovenii Bocage 1870 [Vacelet 1969]

AXINELLIDAE

Acanthella acuta Schmidt 1862 [Topsent 1925b]
— *annulata* Sarà 1958a

Auletta pedunculata (Topsent 1896) [Topsent 1934a]
Axinella babici Vacelet 1961b
— *cannabina* (Esper 1794) [Topsent 1925b]
— *damicornis* (Esper 1794) [Siribelli 1961]
— *guiteli* Topsent 1896 [Vacelet 1969]
— *macrostyla* Babic 1922
— *mahonensis* Ferrer Hernandez 1916
— *minuta* Lévi 1957
— *polypoides* Schmidt 1862 [Topsent 1928]
— *pumila* Babic 1922
— *salicina* Schmidt 1868 [Topsent 1938a]
— *verrucosa* (Esper 1794) [Siribelli 1961]
Axingella perlucida (Topsent 1896)
Ceratopsion minor Pulitzer-Finali 1983 [present paper]
Microstylifer rugosus Vacelet 1969
Phakellia robusta Bowerbank 1866 [Arndt 1934]
— *rugosa* (Bowerbank 1866) [present paper]
— *ventilabrum* (Linné 1767) [Arndt 1934]
Pseudotrachya hystrix (Topsent 1892a) [Vacelet 1969]
— *oxystyla* Sarà 1959 [present paper]
Tragosia flustra (Topsent 1892a) [Topsent 1928]

BUBARIDAE

Bubaris carcisis Vacelet 1969
— *subtyla* Pulitzer-Finali 1983 [present paper]
— *vermiculata* (Bowerbank 1866) [Arndt 1934]
Hymerhabdia contracta Sarà & Siribelli 1962
— *intermedia* Sarà & Siribelli 1960
— *oxytrunca* Topsent 1904
— *papillosa* Sarà & Siribelli 1962
— *pori* Tsurnamal 1969b
— *reichi* Tsurnamal 1969b
— *typica* Topsent 1892b [Pulitzer-Finali 1978]
Lithobubaris tenens Vacelet 1969
Monocrepidium vermiculatum Topsent 1898
Rhabdobaris implicata Pulitzer-Finali 1983 [present paper]
Rhabdoploca curvispiculifera (Carter 1880) [Vacelet 1969]

DESMOXYIDAE

Halicnemia geniculata Sarà 1958a
— *patera* Bowerbank 1864 [Pulitzer-Finali 1978]
Halicortex loricata (Sarà 1958b)
Higginsia mediterranea Pulitzer-Finali 1978

HEMIASTERELLIDAE

Paratimea constellata (Topsent 1893) [Hallmann 1917]
— *oxeata* Pulitzer-Finali 1978
— *pierantonii* (Sarà 1958a)
Stelligera nux Lendenfeld 1896
— *stuposa* (Ellis & Solander 1786) [Arndt 1934]

RASPAILIIDAE

Endectyon delaubenfelsi Burton 1930 [Pulitzer-Finali 1978]
— *pilosus* (Vacelet 1961b)
Raspaciona aculeata (Johnston 1842) [Pulitzer-Finali 1978]
— *calva* Sarà 1958a
— *robusta* Sarà 1958a
Raspailia gracillima Topsent 1894c
— *viminalis* Schmidt 1862 [Topsent 1925b]
— *virgultosa* (Bowerbank 1866) [present paper]
Tethyspira spinosa (Bowerbank 1874) [Arndt 1934]

EURYPONIDAE

Acantheurypon hispidulum (Topsent 1904) [Vacelet 1969]
Eurypon cinctum Sarà 1960a
— *clavatum* (Bowerbank 1866) [Arndt 1934]
— *coronula* (Bowerbank 1874) [Topsent 1936]
— *denisae* Vacelet 1969
— *lacazei* (Topsent 1891) [Topsent 1936]
— *major* Sarà & Siribelli 1960 [Pulitzer-Finali 1978]
— *obtusum* Vacelet 1969
— *topsenti* Pulitzer-Finali 1983 [present paper]
— *vescicularis* Sarà & Siribelli 1960
Hymeraphia stellifera Bowerbank 1864 [Arndt 1934]
Rhabdeurypon spinosum Vacelet 1969
Tricheurypon viride (Topsent 1889) [Topsent 1928]

RHABDEREMIIDAE

Rhabderemia indica Dendy 1905 [Sarà 1961b]
— *minutula* (Carter 1876) [Topsent 1918]
— *spinosa* Topsent 1896 [Pouliquen 1972]
— *toxigera* Topsent 1892 [Topsent 1928]

AGELASIDAE

Agelas oroides (Schmidt 1864)

MERLIIDAE

Merlia deficiens Vacelet 1980
— *normani* Kirkpatrick 1908 [Pulitzer-Finali 1972]

HALICHONDRIIDAE

Amorphinopsis filigrana (Schmidt 1862) [Topsent 1945]
— *pallescens* (Topsent 1892b) [Topsent 1934a]
Astromimus luteus Lendenfeld 1896
Batzella friabilis Pulitzer-Finali 1978
— *inops* (Topsent 1891) [Topsent 1928]
Ciocalypta penicillus Bowerbank 1864 [Arndt 1934]
Coelocalypta hyalina Pulitzer-Finali 1978
Halichondria aurantiaca (Schmidt 1864) [Topsent 1925b]
— *bowerbanki* Burton 1930 [Topsent 1925a as *H. coalita*]
— *contorta* (Sarà 1961b) [present paper]
— *convolvens* Sarà 1960a
— *membrana* (Bowerbank 1866) [Arndt 1934]
— *panicea* (Pallas 1766) [Arndt 1934]
Rhaphisia laxa Topsent 1892b [Pulitzer-Finali 1978]
— *spelaea* Pulitzer-Finali 1983 [present paper]
Spongosorites flavens Pulitzer-Finali 1983 [present paper]
— *intricatus* (Topsent 1892b) [present paper]
— *pachastrelloides* (Topsent 1892a) [Vacelet 1961b]

HYMENIACIDONIDAE

Dictyonella incisa (Schmidt 1880) [Topsent 1938b]
— *marsillii* (Topsent 1893) [Topsent 1938b]
— *obtusa* (Schmidt 1862) [Topsent 1938b]
— *pelligera* (Schmidt 1864) [Topsent 1938b]
Hemimycale columella (Bowerbank 1874) [Arndt 1934 as *Stylotella c.*]
Hymeniacidon mammeata Bowerbank 1866 [Arndt 1934 as *Polymastia m.*]
— *pallescens* Topsent 1892b
— *perlevis* (Montague 1818) [Topsent 1894a]
— *sanguinea* (Grant 1826b) [Arndt 1934]
Laminospongia subtilis Pulitzer-Finali 1983 [present paper]

Leucophloeus mixtus (Sarà 1958a) [Sarà 1978]
Scopalina lophyoropoda Schmidt 1862
Ulosa digitata (Schmidt 1866) [Pulitzer-Finali 1978]
— *stuposa* (Esper 1794) [Vacelet 1960 as *Stylaxinella s.*]
— *tenellula* Pulitzer-Finali 1983 [present paper]
— *tubulata* Pulitzer-Finali 1983 [present paper]

MYCALIDAE

Mycale contarenii (Martens 1824) [Topsent 1924]
— *dentata* Sarà 1958a
— *lingua* (Bowerbank 1866) [Arndt 1934]
— *macilenta* (Bowerbank 1866) [Arndt 1934]
— *massa* (Schmidt 1862) [Arndt 1934]
— *minima* (Waller 1880) [Topsent 1924]
— *retifera* Topsent 1924
— *rotalis* (Bowerbank 1874) [Arndt 1934]
— *sanguinea* Tsurnamal 1969b
— *serrulata* Sarà & Siribelli 1960
— *similaris* (Bowerbank 1874) [Topsent 1924]
— *syrinx* (Schmidt 1862) [Topsent 1924]
— *tunicata* (Schmidt 1862) [Topsent 1924]

HAMACANTHIDAE

Hamacantha falcula (Bowerbank 1874) [Arndt 1934]
— *implicans* Lundbeck 1902 [Arndt 1934]
— *johnsoni* (Bowerbank 1864) [Arndt 1934]
— *lundbecki* Topsent 1904 [Vacelet 1969]
— *megancistra* Pulitzer-Finali 1978

CLADORHIZIDAE

Cladorhiza abyssicola Sars 1872 [Arndt 1934]

BIEMNIDAE

Biemna partenopea Pulitzer-Finali 1978
— *tenuisigma* Pulitzer-Finali 1978
— *variantia peracuta* (Topsent 1927) [Vacelet 1969 as *B. peachi p.*]
Desmacella inornata (Bowerbank 1866) [Arndt 1934]
— *rosea* Fristedt 1887 [Topsent 1925b as *Tylodesma r.*]
Sigmatoxella annexa (Schmidt 1870) [Arndt 1934 as *Tylodesma a.*]
Tylosigma campechianum (Topsent 1889) [Topsent 1894d]

ESPERIOPSIDAE

Crambe crambe (Schmidt 1862) [Topsent 1925b]
Desmacidon adriatica Sarà 1969
— *fruticosa* (Montague 1818) [Arndt 1934]
Esperiopsis strongylophora Vacelet 1969

COELOSPHAERIDAE

Acheliderma lemniscata Topsent 1892b
Coelectis insinuans Topsent 1936
Dragmatella aberrans (Topsent 1890) [Vacelet 1969]
Histodermella apuliae Sarà 1969

CRELLIDAE

Anisocrella hymedesmina Topsent 1927 [Vacelet 1969]
Crella elegans (Schmidt 1862) [Arndt 1934]
— *pulvinar* (Schmidt 1868) [Topsent 1938a]
— *rubiginosa* (Schmidt 1862) [Topsent 1939]
Phytheas alba Vacelet 1969
— *digitifera* Lévi 1959 [Vacelet 1961b]

Phytheas fusifera (Sarà 1969)
— *nodulosa* (Sarà 1959)
— *papillosa* (Schmidt 1870) [Topsent 1925b as *Crella p.*]
— *rosea* (Topsent 1892b) [Arndt 1934 as *Crella r.*]
— *sigmata* (Topsent 1925b) [Topsent 1928]
Yvesia topsenti (Babic 1922) [Topsent 1928]

MYXILLIDAE

Anisotylacanthea curvata Vacelet 1969
Damiriana schmidti (Ridley 1884) [Tsurnamal 1969a]
Damiriella cavernosa (Topsent 1892b) [Pulitzer-Finali 1978]
Iophon hyndmani (Bowerbank 1866) [Arndt 1934]
— *pattersoni* (Bowerbank 1866) [Arndt 1934]
Iophonopsis nigricans (Bowerbank 1866) [Lévi & Vacelet 1958]
Lissodendoryx basispinosa Sarà 1958a
— *caduca* (Schmidt 1868) [Topsent 1938a]
— *isodictyalis* (Carter 1882) [Topsent 1925b]
Melonanchora emphysema (Schmidt 1875) [Arndt 1934]
Myxilla incrustans reses (Topsent 1892) [Topsent 1936]
— *iotrochotina* (Topsent 1892b) [Topsent 1936]
— *jecusculum* (Bowerbank 1866) [Topsent 1894d]
— *macrosigma* Boury-Esnault 1971
— *prouhoi* (Topsent 1892b) [Topsent 1925b]
— *rosacea* (Lieberkühn 1859) [Arndt 1934]
Paramyxilla mediterranea Sarà & Siribelli 1960
Quintoxilla arcitenens (Topsent 1892b)

TEDANIIDAE

Tedania anhelans (Lieberkühn 1859) [Topsent 1939]
— — *digitata* (Schmidt 1862) [Topsent 1936]

HYMEDESMIIDAE

Hymedesmia baculifera (Topsent 1901) [Boury Esnault 1971]
— *castanea* Sarà 1964
— *consanguinea* Lundbeck 1910 [Babic 1922]
— *gracilisigma* Topsent 1928 [Vacelet 1969]
— *inflata* Vacelet 1969
— *mollis* Lundbeck 1910 [Babic 1922]
— *mutabilis* (Topsent 1904) [Vacelet 1969]
— *omissa* Topsent 1938a
— *pansa* Bowerbank 1882 [Arndt 1934]
— *peachii* Bowerbank 1882 [Arndt 1934]
— *plicata* Topsent 1928 [Vacelet 1969]
— *rissoi* (Topsent 1936) [Sarà & Siribelli 1962]
— *serrulata* Vacelet 1969
— *versicolor* (Topsent 1893) [Topsent 1936]
— *zetlandica* Bowerbank 1866 [Arndt 1934]
Hymetrichita rectirhaphis Pulitzer-Finali 1983 [present paper]
Leptolabis brunnea (Topsent 1904)
— *exilis* (Topsent 1892b) [Topsent 1925b]
— *luciensis* (Topsent 1888b) [Topsent 1925b]
Spanioplon armaturum (Bowerbank 1866) [Arndt 1934]
— *osculosum* (Topsent 1892b) [Topsent 1936]
Stylopus dujardini (Bowerbank 1866) [Arndt 1934]
— *nigrescens* Topsent 1925b
— *pulposus* (Topsent 1925b)

ANCHINOIDAE

Anchinoe fictitius (Bowerbank 1866) [Topsent 1925b]
— *mercator* (Schmidt 1868) [Topsent 1938b]

Anchinoe paupertas (Bowerbank 1866) [Arndt 1934]
— *tenacior* Topsent 1925b
Hamigera hamigera (Schmidt 1862) [Topsent 1936]
Lissopocillon dendyi Ferrer Hernandez 1916
Stylostichon dives (Topsent 1891) [Topsent 1934b]
— *fibulatum* Topsent 1893 [Topsent 1925b]
— *lieberkühni* (Burton 1930) [Topsent 1936]
— *plumosum* (Montague 1818) [Arndt 1934]

CLATHRIIDAE

Acanthacarnus souriei Lévi 1952
Acarnus polytylus Pulitzer-Finali 1983 [present paper]
— *tortilis* Topsent 1892b [Topsent 1904]
Antho involvens (Schmidt 1864) [Lévi 1960]
— — *inconstans* (Topsent 1925b) [Lévi 1960]
— *paradoxa* (Babic 1922) [Lévi 1960]
— *paucispina* Sarà & Siribelli 1962
Clathria compressa Schmidt 1862 [Lévi 1960]
— *coralloides* (Olivi 1792) [Lévi 1960]
— *depressa* Sarà & Melone 1966
— *frondiculata* (Schmidt 1864) [Topsent 1925b]
— *marissuperi* Pulitzer-Finali 1983 [present paper]
— *oxeifera* Ferrer Hernandez 1921 [Lévi 1960]
— *pluritpla* Pulitzer-Finali 1983 [present paper]
— *toxistricta* Topsent 1925b
— *toxistyla* (Sarà 1959) [Melone 1963]
— *toxivaria* (Sarà 1959) [Melone 1963]
Microciona angularis Sarà & Siribelli 1960
— *armata* Bowerbank 1866 [Lévi 1960]
— *assimilis* (Topsent 1925b) [Vacelet 1969]
— *atrasanguinea* Bowerbank 1862 [Lévi 1960]
— *chelifera* Lévi 1960
— *cleistochela* (Topsent 1925b) [Lévi 1960]
— *duplex* (Sarà 1958a) [Lévi 1960]
— *fregeti* Vacelet 1969
— *gradalis* (Topsent 1925b) [Lévi 1960]
— *haplotoxa* (Topsent 1928) [Lévi 1960]
— *levii* Sarà & Siribelli 1960
— *poecilosclera* Sarà & Siribelli 1960
— *strepsitoxa* Hope 1889 [Lévi 1960]
— *toximajor* (Topsent 1925b) [Lévi 1960]
— *toxirecta* Sarà & Siribelli 1960
— *toxitenuis* (Topsent 1925b) [Lévi 1960]
Ophlitaspongia seriata (Grant 1826b) [Lévi 1960]
— *translata* Pulitzer-Finali 1978
Plocamilla circonflexa Lévi 1960
— *coriacea* (Bowerbank 1874) [Lévi 1960]
Plocamionida ambigua (Bowerbank 1866) [Arndt 1934]
Rhaphidophlus jolicoeuri Topsent 1892b [Lévi 1960]

HALICLONIDAE

Dendroxea lenis (Topsent 1892b) [Griessinger 1971]
Gellius apertus Sarà 1960a
— *cucurbitiformis* Kirkpatrick 1907 [Babic 1922]
— *lacazei* Topsent 1893 [Vacelet 1969]
— *microsigma* Babic 1922
— *microxifer* Topsent 1925b
— *tenuisigma* Sarà & Siribelli 1960
— *uncinatus* Topsent 1892b

Haliclona citrina (Topsent 1892b) [Griessinger 1971]
— *elegans* (Bowerbank 1866) [Griessinger 1971]
— *fertilis* (Keller 1879) [Griessinger 1971]
— *limbata* (Montague 1818) [Griessinger 1971]
— *mediterranea* Griessinger 1971
— *membranacea* (Schmidt 1868)
— *montaguii* (Fleming 1828) [Desqueyroux-Faundez as *Chalinula m.*]
— *renieroides* (Schmidt 1868) [Pulitzer-Finali 1978]
— *stirpescens* (Topsent 1925a) [Griessinger 1971]
— *subtilis* Griessinger 1971
Reniera alba Schmidt 1862
— *aquaeductus* Schmidt 1862 [Griessinger 1971]
— *arenata* Griessinger 1971
— *cratera* Schmidt 1862 [Griessinger 1971]
— *flavescens* Topsent 1893 [Griessinger 1971]
— *fulva* Topsent 1893 [Griessinger 1971]
— *grossa* Schmidt 1864 [Griessinger 1971]
— *implexa* Schmidt 1868 [Griessinger 1971]
— *mamillata* Griessinger 1971
— *mucosa* Griessinger 1971
— *omissa* Griessinger 1971
— *perlucida* Griessinger 1971
— *plana* Topsent 1892b [Griessinger 1971]
— *pocilliformis* Griessinger 1971
— *poecillastroides* Vacelet 1969
— *rosea* (Bowerbank 1866) [Griessinger 1971]
— *sarai* Pulitzer-Finali 1969
— *valliculata* Griessinger 1971
— *viscosa* Topsent 1888a [Griessinger 1971]
Rhizoniera rhizophora (Vacelet 1969) [Griessinger 1971]

ADOCIIDAE

Adocia cribrata Pulitzer-Finali 1983 [present paper]
— *laevis* Griessinger 1971
— *palmata* (Lieberkühn 1859) [Griessinger 1971]
— *reptans* Griessinger 1971
— *simulans* (Johnston 1842) [Pulitzer-Finali 1978]
— *varia* Sarà 1958a
— — *tabulata* Sarà 1958a
— *venata* Sarà 1960a
Orina angulata (Bowerbank 1866) [Arndt 1934 as *Gellius a.*]
— *arnesenae* (Arndt 1927) [Vacelet 1969 as *Gellius a.*]
— *marismedi* (Pulitzer-Finali 1978)
Sigmadocia flagellifer (Ridley & Dendy 1886) [Bergquist & Warne 1980]

NIPHATIDAE

Amphimedon rustica (Schmidt 1868) [Pulitzer-Finali 1978 as *Pachychalina r.*]
Gelliodes fibulata (Schmidt 1862) [Vacelet 1961b]

CALLYSPONGIIDAE

Callyspongia septimaniensis Griessinger 1971
Siphonochalina balearica Ferrer Hernandez 1916 [Griessinger 1971]
— *coriacea* Schmidt 1868 [Griessinger 1971]
— *crassa* Topsent 1925b
— *expansa* Sarà 1960a
— *subcornea* Griessinger 1971

PETROSIIDAE

Petrosia clavata (Esper 1794) [present paper]
— *ficiformis* (Poiret 1789) [present paper]

Oceanapiidae

Calyx nicaeensis (Risso 1826) [Topsent 1925b]
Oceanapia constructa (Rützler 1965)
— *decipiens* (Sarà 1958a)
— *perforata* (Sarà 1960a)
— *vacua* (Sarà 1961b)
Pachypellina parietalis (Topsent 1893) [Griessinger 1971 as *Pellina p.* and present paper]
Pellina fistulosa (Bowerbank 1866) [Griessinger 1971]
— — *latens* (Topsent & Olivier 1943) [Griessinger 1971]
— *magna* (Vacelet 1969) [Griessinger 1971]
— *semitubulosa* (Lieberkühn 1859) [Griessinger 1971]

Haplosclerida incertae sedis

Dendrectilla tremitensis Pulitzer-Finali 1983 [present paper]
Janulum spinispiculum (Carter 1876) [Vacelet 1969]
Sarcomella medusa Schmidt 1868 [Topsent 1938b]

Spongiidae

Hippospongia communis (Lamarck 1813) [Vacelet 1959]
Spongia agaricina Pallas 1766 [Vacelet 1959]
— *nitens* (Schmidt 1862) [Vacelet 1959]
— *officinalis* Linné 1759 [Vacelet 1959]
— — *adriatica* (Schmidt 1862) [Vacelet 1959]
— *virgultosa* (Schmidt 1868) [Vacelet 1959]
— *zimocca* Schmidt 1862 [Vacelet 1959]

Thorectidae

Cacospongia mollior Schmidt 1862 [Vacelet 1959]
— *proficens* Pulitzer-Finali & Pronzato 1980
— *scalaris* Schmidt 1862 [Vacelet 1959]
Fasciospongia coerulea Vacelet 1959
— *cavernosa* (Schmidt 1862) [Vacelet 1959]
Hyrtios collectrix (Schulze 1879b) [Vacelet 1959 as *Oligoceras c.*]
— *erecta* (Keller 1889) [Tsurnamal 1969a as *Heteronema e.*]
Ircinia chevreuxi (Topsent 1894c)
— *dendroides* (Schmidt 1862) [Vacelet 1959]
— *foetida* (Schmidt 1862) [Vacelet 1959, Pulitzer-Finali & Pronzato 1977]
— *oros* (Schmidt 1864) [Vacelet 1959]
— *paucifilamentosa* Vacelet 1961a
— *pipetta* (Schmidt 1868) [Pulitzer-Finali & Pronzato 1980]
— *retidermata* Pulitzer-Finali & Pronzato 1980
— *spinosula* (Schmidt 1862) [Pulitzer-Finali & Pronzato 1977]
— *variabilis* (Schmidt 1862) [Vacelet 1959 as *I. fasciculata*, Pulitzer-Finali & Pronzato 1977 as *I. typica*, Pulitzer-Finali & Pronzato 1980]

Dysideidae

Dysidea avara (Schmidt 1862) [Vacelet 1959]
— — *pallescens* (Schmidt 1862) [Vacelet 1959]
— *fragilis* (Montague 1818) [Vacelet 1959]
— *perfistulata* Pulitzer-Finali & Pronzato 1980
— *tupha* (Martens 1824) [Vacelet 1959]
Psammopemma nicaeense Pulitzer-Finali & Pronzato 1980
Spongionella gracilis (Vosmaer 1883) [Pulitzer-Finali & Pronzato 1977, 1980]
— *pulchella* (Sowerby 1806) [Vacelet 1959]
— *ramodigitata* (Topsent 1901) [Vacelet 1959]
— *repens* (Topsent 1928) [Vacelet 1959]

Aplysillidae

Aplysilla rosea (Barrois 1876) [Pulitzer-Finali & Pronzato 1977]
— *sulfurea* Schulze 1878a [Vacelet 1959]
Chelonaplysilla erecta (Row 1911) [Tsurnamal 1967]
— *noevus* (Carter 1876) [Vacelet 1959]
— *psammophila* (Topsent 1928) [Vacelet 1969]
Darwinella australiensis Carter 1885 [Pulitzer-Finali & Pronzato 1977]
— *dalmatica* Topsent 1905 [Vacelet 1959]
— *gardineri* Topsent 1905 [Pronzato 1975]
— *intermedia* Topsent 1893 [Topsent 1905]
— *viscosa* Boury-Esnault 1971
Dendrilla acantha Vacelet 1958
— *cirsioides* Topsent 1893 [Vacelet 1959]
Hexadella detritifera Topsent 1913 [Vacelet 1969]
— *racovitzai* Topsent 1896 [Vacelet 1969]
Pleraplysilla minchini Topsent 1905 [Pulitzer-Finali & Pronzato 1977]
— *spinifera* (Schulze 1878b) [Vacelet 1959]

Halisarcidae

Halisarca dujardinii Johnston 1842 [Arndt 1934]
— *sputum* Topsent 1893 [Vacelet 1959]

Aplysinidae

Aplysina aerophoba Schmidt 1862 [Vacelet 1959 as *Verongia a.*]
— *cavernicola* (Vacelet 1959)

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ABSTRACT

Part of a collection of Mediterranean Demospongiae is systematically recorded. It comprises 199 species of which 29 are described as new: *Corticium reductum*, *Stelletta dichoclada*, *S. defensa*, *Erylus papulifer*, *E. corsicus*, *Calthropella inopinata*, *Sphinctrella verrucolosa*, *Poecillastra rudiastra*, *Cinachyra tarentina*, *Polymastia sola*, *Cliona cretensis*, *Timea simplistellata*, *T. bifidostellata*, *Latrunculia tarentina*, *Ceratopsion minor*, *Bubaris subtyla*, *Rhabdobaris implicata*, *Eurypon topsenti*, *Rhaphisia spelaea*, *Spongosorites flavens*, *Laminospongia subtilis*, *Ulosa tenellula*, *U. tubulata*, *Hymetrichita rectirhaphis*, *Clathria marissuperi*, *C. plurityla*, *Acarnus polytylus*, *Adocia cribrata*, *Dendrectilla tremitensis*. Three new genera are proposed: *Rhabdobaris* (Bubaridae), *Laminospongia* (Hymeniacidonidae) and *Dendrectilla* (Haplosclerida).

A list of the Demospongiae so far recorded from the Mediterranean Sea is added.

RIASSUNTO

Parte di una collezione di Demospongiae mediterranee viene sistematicamente registrata. Essa comprende 199 specie, di cui 29 nuove: *Corticium reductum*, *Stelletta dichoclada*, *S. defensa*, *Erylus papulifer*, *E. corsicus*, *Calthropella inopinata*, *Sphinctrella verrucolosa*, *Poecillastra rudiastra*, *Cinachyra tarentina*, *Polymastia sola*, *Cliona cretensis*, *Timea simplistellata*, *T. bifidostellata*, *Latrunculia tarentina*, *Ceratopsion minor*, *Bubaris subtyla*, *Rhabdobaris implicata*, *Eurypon topsenti*, *Rhaphisia spelaea*, *Spongosorites flavens*, *Laminospongia subtilis*, *Ulosa tenellula*, *U. tubulata*, *Hymetrichita rectirhaphis*, *Clathria marissuperi*, *C. plurityla*, *Acarnus polytylus*, *Adocia cribrata*, *Dendrectilla tremitensis*. Tre generi nuovi vengono proposti: *Rhabdobaris* (Bubaridae), *Laminospongia* (Hymeniacidonidae) e *Dendrectilla* (Haplosclerida).

In appendice viene data una lista delle Demospongiae finora segnalate dal Mediterraneo.